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COMMENTS ON SEWAGE CONTAMINATION OF COASTAL BATHING WATERS

O. J. COETZEE, M.Sc. (AGRIC.) (PRET.), PH.D. (READING)

National Institute for Water Research, South African Council for Scientific and Industrial Research, Pretoria.

INTRODUCTION

The findings by the Committee on Bathing Beach Contamination of the Public Health Laboratory Service[1] have given rise to comment by various coastal authorities. Health authorities find it difficult to convince city councils of the potential dangers.

The presence of the sea offers an almost irresistible temptation to seaside municipalities to dispose cheaply therein the sewage of the community.

THE DANGER OF DISCHARGE OF EFFLUENTS INTO THE SEA

Sea or estuary water receiving raw waste water may be dangerous: (1) In coastal areas where there are mussel beds and in estuaries where oysters are cultivated, and, (2) on beaches, especially in bathing areas.

In both the above cases, the pathogenic bacteria are mainly, though not exclusively, salmonellae. To give a sufficient degree of safety, purification in sea water must be rapid enough to destroy the bacteria in a few hours (and in a shorter time if the outfall is particularly near to the important points). Available literature pays little attention to this aspect of the problem. It seems clear that direct discharge of waste water into the sea is bacteriologically objectionable; in practice the most important requirements are to know its effects on public health.

1. *Shell-fish Beds*

A tolerant attitude cannot be allowed and standards must be severe. The literature contains many reports of the presence of salmonellae in edible shell fish such as mussels, oysters, cockles and clams.

Brisou[2] says that the number of cases of salmonellosis due to shell fish is very high. At Toulon, mussels from polluted sea water caused 14 cases in less than 6 months. The reason for this high infectivity rate in molluscs is obvious; they actually concentrate pathogenic organisms.

Belin[3] in 1934 estimated that during the previous 15 years more than 100,000 cases of typhoid fever, of which 25,000 had ended fatally, occurred in France due to the consumption of shell fish.

Roos[4] found that an epidemic of infective hepatitis in Sweden was caused by oysters. He further states that waste water should be treated sufficiently to destroy all pathogenic microbes and even viruses.

2. *Sea and Estuarial Bathing Places*

A report in 1940[5] by a joint committee on bathing places of the Association of Public Health of America and the Conference of State Sanitary Engineers, expressed the view that there was surprisingly little evidence in support of infection through bathing. In a progress report of the same committee in 1952[6] on an investigation in Chicago, no noticeable correlation was found between the coliform counts of bathing waters of two beaches and illness among the bathers.

Steiniger[7] reports that no paratyphoid infections had been traced to bathing in the harbour of Husum, although *S. paratyphi B* could be isolated regularly in large numbers from the water and the silt of the harbour in which vast numbers of people bathed every summer.

Buttiaux and Leurs[8] state that in the neighbourhood of the North Sea Beach, where they found *S. montevideo*, no case of disease attributable to it had been reported for 3 years. Buttiaux[9] concludes that the transmission of salmonelloses by immersion and bathing in polluted sea water is therefore possible but apparently exceptional. He continues by stating that amongst the virus diseases, especially poliomyelitis and infective hepatitis, there is little convincing evidence for the part played by bathing places in the spread of virus diseases, and none at all relating to sea water.

Winslow and Moxon[10] at New Haven, Connecticut, found that most of 61 typhoid cases which occurred in the area during 1921 - 1922, were attributed to bathing in this area.

A series of infections with *S. paratyphi B*, which occurred at a seaside resort in North Devon every summer between 1943 and 1946, concentrated local attention on a very unsatisfactory sewage outfall. At this resort sewage is discharged into the sea at all stages of the tide, frequently causing fouling of the adjacent beach. This initiated the survey of beach pollution by Moore.[11] The outbreaks were eventually traced to a carrier, but in at least 2 or 3 of the cases Moore considered that the illness was almost certainly due to beach infections.

In 3 districts served by the Exeter laboratory, where sporadic cases of paratyphoid and typhoid fever have occurred regularly during the past 10 years, Moore, Perry and Chard[12] found that there was a common epidemiological factor in the lack of an adequate barrier between the local population and sewage from the area. In 2 of the areas there was an unsatisfactory sewage outfall and in the third a polluted river from which water was drawn for watering allotments.

Moore suggests that in an endemic enteric district — and it is worth-while noting that enteric is endemic in South Africa — where the local population is not completely protected from contact with sewage, it is safer to assume that this contact plays a direct or indirect part in maintaining the endemic infection in the area, and that steps should be taken to lessen the chances of exposure to potential infection.

Boyer and Tissier[13] point out the rarity of cases of poliomyelitis in which a bathing place can be incriminated.

The examples mentioned above illustrate the danger

to the public health in communities in which both carriers and subclinical infections occur.

The Committee on Bathing Beach Contamination,[1] in an exhaustive study on the contamination of bathing beaches in England and Wales (and it is important to note that this study was carried out in England and Wales), came to the conclusion that:

1. Bathing in sewage-polluted sea water carries only a negligible risk to health, even on beaches that are aesthetically very unsatisfactory.

2. The minimal risk attending such bathing is probably associated with chance contact with intact aggregates of faecal material that happen to have come from infected persons.

3. The isolation of pathogenic organisms from sewage-contaminated sea water is more important as evidence of an existing hazard in the populations from which the sewage is derived, than as evidence of a further risk of infection in bathers.

4. Since a serious risk of contracting disease through bathing in sewage-polluted sea water is probably not incurred unless the water is so fouled as to be aesthetically revolting, public-health requirements would seem to be reasonably met by a general policy of improving grossly insanitary bathing waters and of preventing as far as possible the pollution of bathing beaches with undisintegrated faecal matter during the bathing season.

In answer to (1) above, attention should be drawn to the difference in carrier rates in England and South Africa. In New York State, exclusive of New York City, Ames and Robins,[14] in 1943, calculated that in 1940 there were about 42 typhoid carriers per 100,000 population. According to them, the rate in Great Britain is probably not more than 2 per 100,000 population. In South Africa the true numbers of carriers of *S. typhi* is still very doubtful. It was estimated by Cluver[15] in 1946 that 2% of the Bantu population were carriers. The only other estimate that could be found was that of Bokkenheuser,[16] namely about 0·1%. Bokkenheuser[17] is inclined to believe that this figure might be lower, namely 0·05%. He adds that there may be a considerable number of subclinical cases which recover spontaneously. Thus it would appear that the carrier rate lies between 100 and 2,000 per 100,000 population.

Loubser[18] put the possibility of typhoid fever being treated as a normal gastro-intestinal disturbance as very high. This statement suggests that the above claims for South Africa might well be conservative estimates.

Under (2) in the above Committee's conclusions, the South African figures would mean that the chances of the sea water containing intact particles with viable salmonellae originating from chronic carriers of *S. typhi*, would be about 50 times greater than in Great Britain. To this must be added an unknown but probably highly significant contribution from undetected cases of subclinical typhoid infections, since the disease as measured by notification rates is about 60 times more prevalent than in Great Britain.[19]

In (3) it is stated by the Committee 'that the isolation of pathogenic organisms from sewage-contaminated sea water is more important as evidence of an existing hazard in the populations . . . '. This conclusion must be read in conjunction with point (5) in their summary, where they state that *S. paratyphi B* were isolated from 13·3% to 40·1% of sea-water samples examined. These rather high percentages of positive isolations are qualified by the further statement that 'comparison of the numbers of salmonellae isolated with what is known of the minimum infective doses of these organisms, suggested that very large volumes of sea water would require to be ingested for infection to occur'.

The minimum infective dose of salmonellae would vary considerably, but Kehr and Butterfield[20] estimated that about 1 out of every 50 persons who ingests a single *S. typhi* actually contracts typhoid fever. On this basis they calculated the chance of a person contracting typhoid during a 90-day season as being 1 in 950 for the daily swimmer, i.e. with a typhoid-morbidity rate in the population of 4 per 100,000. All being equal, in South Africa (with a conservative estimate of the sea water being say 100 times more infected) the chances would be 1 in 28·5 for the daily swimmer in a 30-day period.

Streeter[21] in North America, quoting Wolman, Gorman, Eliassen and Cummings, estimated that the morbidity rates of water-borne diarrhoea-enteritis averaged about 20 times those of typhoid fever. If this ratio is applied in South Africa to the typhoid risk along the coast for the individual daily bather, his chances of contracting diarrhoea-enteritis during a 30-day season would be 1 in 1·42 provided the concentration of sewage is similar.

Under (4) in the conclusions of the Committee on Bathing Beach Contamination, certain reservations are still held by stating that, 'since a "serious" risk of contracting disease of bathing in sewage-polluted sea water . . . '. In this conclusion they probably could not overlook point (7) in their summary where they state that 4 cases of paratyphoid fever due to bathing were recorded. The Committee must also have had in mind the cases of paratyphoid and typhoid fever, quoted in their own literature survey, contracted from paddling and bathing in contaminated sea-bathing places and drinking from polluted streams. This conclusion further states that 'public-health requirements would seem to be reasonably met by a general policy of improving grossly insanitary bathing waters and of preventing so far as possible the pollution of bathing beaches with undisintegrated faecal matter during the bathing season'. Koch[22] found that sewage effluent could travel hundreds of yards without dilution and that faecal particles were protected from coming into contact with either the air or surrounding water. He goes on to say that where a shore is inhabited or has been developed as a bathing place, or has shell-fish beds on it, the protection it derives merely from the remoteness of a polluted discharge, even if the prevailing winds are favourable, is highly doubtful.

The question arises: what would be a safe limit to establish a sewer outfall and, since Aglitskii and Khair[23] noted contamination of sea water 3,000 metres from the outfall, grave doubts arise about the habit of some coastal authorities who allow the discharge of effluents into the surf zone along the South African beaches.

The next question is what constitutes undisintegrated faecal matter? Taking into consideration that a carrier excretes from 1,000,000 up to 12,000,000,000 salmonellae per gram of faeces, it is obvious that particles which could

afford bacteria protection from sea water could harbour thousands of these bacteria and be invisible to the naked eye.

The Committee state in their summary that 'a statistically controlled study of the bathing histories of 150 poliomyelitis cases in children living permanently by the seaside gave no evidence that bathing had played a part in causing the disease'. This conclusion would have been valid if it had been compared with the case histories of holiday children from inland who had contracted the disease after leaving the seaside resort. The children living at the seaside and continually being exposed to infection of the virus could have an acquired immunity, and this would support the above conclusion.

Lack of information and uncertainty about the mode of infection still prevail for many viral diseases. This encourages caution when establishing standards based on any of the present-day accepted indices of contamination. Gilcreas and Kelly[24] have shown in laboratory experiments that at water temperatures of 8 - 10°C. the persistence of Theiler and Coxsackie viruses is much greater than that of a laboratory strain of *E.coli* (which has a higher resistance than a natural strain).

The Committee found that in only a few instances could *Staphylococcus aureus* be isolated from sea water, since this was the only nasopharyngeal organism for which adequate enrichment media were available. Their epidemiological inquiries thus exclude the incidence of ear, nose and throat diseases due to bathing in sewage-polluted sea water.

The fact that no *Mycobacterium tuberculosis* or *Mycobacterium balnei* organisms were isolated in the sea water investigated in England and Wales, would not exclude the possibility of finding them in South African waters, due to the higher incidence of tuberculosis in South Africa, especially amongst the Bantu population.

CONCLUSION

In the light of the available information, there is considerable doubt as to the validity of the Committee's findings when applied to South African conditions.

The CSIR is following up details about the rather adverse reception this report had in medical circles in the United Kingdom.

I wish to thank the South African Council for Scientific and Industrial Research for permission to publish this paper.

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TUMOURS OF SALIVARY ORIGIN

J. E. ROOS-SCHOLTZ, F.R.C.S., *Nelspruit, Transvaal**

The incidence of salivary tumours, particularly that of the pleomorphic adenomata or 'mixed' tumours of salivary origin, varies geographically and racially, as shown by du Plessis[1] and Schulenburg.[2] Though their published figures concerning these tumours do not coincide with the published reports of European and American observers with particular regard to site distribution, Schulenburg[2] points out that the Coloured races are less liable to develop these tumours in the parotid gland, and that they show a correspondingly greater tendency to tumours in other sites.

This paper is an analysis of patients whose salivary tumours were removed and sent to the Institute for Pathology, Pretoria, for histological examination in the 5-year period from 1954 to 1958 inclusive. This analysis brings up-to-date the investigation covering the period 1946 - 1953 made by Schulenburg.[2] In the period under review there are 73 cases of salivary tumours, diagnosed microscopically, and these will be compared with the results of the previous investigation.

* Formerly clinical assistant, Department of Surgery, University of Pretoria.

'MIXED' TUMOURS

Fifty-seven cases of pleomorphic adenomata occurred in this group of patients and constitute 78% of the total, compared with 81% in the previous series, making a yearly average of 11·4 and 10·5 cases in each series respectively.

Age Incidence

In both series it was found that the majority of cases occurred between the ages of 30 and 60 years and particularly in the fifth decade. There were no cases before the tenth year of age and the oldest patient in the present group was a 74-year-old White woman (Table I).

Site Distribution

Table II shows that, while the majority of tumours occur in the parotid glands, more than half the Bantu patients had tumours in the other sites.

Race Incidence

There were 23 (40%) White and 34 (60%) Bantu patients with 'mixed' tumours, while there were no Indian or Coloured patients. In the previous series a greater pro-

TABLE I. DISTRIBUTION OF 'MIXED' SALIVARY TUMOURS ACCORDING TO AGE, IN TWO SERIES OF CASES

Age (in years)	1946 - 1953 series	1954 - 1958 series		
	Total	White	Bantu	Total
0 - 10	0	0	0	0
11 - 20	5	2	4	6
21 - 30	12	2	6	8
31 - 40	22	4	6	10
41 - 50	20	8	7	15
51 - 60	12	3	6	9
61 - 70	6	3	0	3
71 - 80	2	1	0	1
81 - 90	1	0	0	0
Unknown	4	0	5	5

TABLE II. DISTRIBUTION OF 'MIXED' SALIVARY TUMOURS ACCORDING TO SITE, IN TWO SERIES OF CASES

Site	1946 - 1953 series	1954 - 1958 series			
	Total	White	Bantu	Total	
Parotid gland ..	39 (46%)	19	14	33	(58%)
Submandibular gland	16 (19%)	1	8	9	(16%)
Palate	26 (31%)	1	6	7	(15·5%)
Other sites		1	1	2	
Not stated	3 (4%)	1	5	6	(10·5%)

portion of White patients (i.e. 57%) was found, and the difference may in part be explained by the fact that in recent years a private firm of pathologists has become established in Pretoria and has attracted a large proportion of the private practice formerly enjoyed by the Institute for Pathology.

Sex Incidence

In the previous series a predominance of females was found (55%) in agreement with other investigations, while in this series males predominated in the ratio of 3 : 2 (i.e. 34 males to 23 females).

Comment

Schulenburg[2] reported that the 'mixed'-tumour incidence in Pretoria differed from that reported elsewhere and came to the conclusion that the difference lay in the increased incidence in ectopic sites (other than the parotid gland) among the non-White races. The present investigation bears this out but the difference was not as great as previously found.

It was thought to be of little value to consider the occurrence of 'mixed' tumours relative to hospital admissions since only 16 of the 23 White patients were admitted to the Pretoria General Hospital, while an unknown number of patients with salivary tumours admitted to this hospital was examined histologically elsewhere and was thus lost to this investigation. Furthermore, since the number of admissions to the White and non-White wards was roughly equal (approximately 100,000 each in the 5-year period reviewed), it was considered that the actual racial proportions were not adequately represented.

OTHER TUMOURS

Sixteen cases, of which 10 were primary salivary carcinomas, formed this group. Cases with carcinoma were distributed over all age groups between 16 and 86 years, males predominated in the ratio of 3 : 2, the parotid glands were affected in 8 cases, and there were 6 Bantu and 4 White cases.

Apart from the 10 primary carcinomas, the tumours in this group were: papillary lymphomatous cystadenoma, 2; adenolymphoma, 1; adenoma, 2; and oncocytoma, 1.

SUMMARY

A further series of 57 cases of 'mixed' salivary tumours and 16 cases of the more unusual forms of salivary tumours has been added to the investigation reported by Schulenburg in 1954.[2] Non-White patients are more frequently affected by mixed tumours of salivary tissue other than the parotid, compared with White patients.

OPSOMMING

'n Verdere reeks gevalle, bestaande uit 57 ,gemengde' speekselkliergewasse en 16 ander, meer seldsame, gewasse van speekselklier-oorsprong word by die reeks gevalle wat Schulenburg in 1954 gerapporteer het, gevoeg. Daar is ooreenstemming met die bevindings van die vorige ondersoek in die volgende opsigte:

1. ,Gemengde'-speekselkliergewasse onder Blankes word hoofsaaklik in die parotisklier gevind, soos elders beskryf.

2. In vergelyking met Blankes kom ,gemengde'-speekselkliergewasse by nie-Blankes meer dikwels voor in ander gebiede as die parotisklier.

3. Gewasse van speekselkliere kom seldsaam by kinders voor, maar veral by 30 - 60-jarige persone.

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THE SOUTH AFRICAN MEDICAL CONGRESS, 24-30 SEPTEMBER 1961, CAPE TOWN

The Forty-third Medical Congress of the Medical Association of South Africa will be held in *Cape Town* from 24 to 30 September 1961. Information regarding the Congress is published at regular intervals in the *Journal*. Although it is still relatively early, members who intend coming to Congress are requested to send in their Intention Forms as soon as possible.

Prospective visitors to the Congress are also requested to bear in mind that *hotel accommodation in Cape Town is somewhat limited* and that they should make the necessary reservations well in advance of Congress. The Travel Bureau of the South African Railways has been appointed the official agent in this connection. Members are requested to contact their local agents who have been extensively circularized in this respect. In the small platteland towns the nearest station master will handle the matter.

Make your reservations now in order to avoid disappointment. In the event of any difficulty, please write to Dr. J. C. Coetzee, Convener, Accommodation Sub-Committee, 43rd South African Medical Congress, P.O. Box 643, Cape Town.

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VAN DIE REDAKSIE : EDITORIAL

KOORS—VRIEND OF VYAND?

As ons koors gedefinieer het as 'n verhoogde sentrale liggaamstemperatuur as gevolg van 'n versteurde termotaktiese meganisme, kan ons die oorsake van so 'n versteuring in vier breë groepe verdeel: (1) Skade aan die sentrale senuweestelsel, gewoonlik die gevolg van intraserebrale bloeding, (2) infeksies en infestasies, van virusse af tot wurms, (3) weefselbekadiging, bv. infarksies, maligne tumore, en jig, en (4) onsekere oorsake, bv. dié wat volg op immuniteitsreaksies, bv. lupus eritematose en rumatiekkoors, en na bloeding van die spysverteringskanaal. Hierdie vier groepe kan die termotaktiese meganisme omverwerp deur middel van (*a*) bakteriële produkte, (*b*) liggaamsel-produkte.

Bogenoemde paragraaf som dan verskeie velde op waar die navorser en sy laboratorium in staat was om in te gaan op die fyner meganisme van temperatuur-regulasie, die isolering van 'n bakteriële endotoksien uit gramnegatiewe organismes, die identifikasie daarvan as 'n polisakkaried, en endogene pirogeen afkomstig, waarskynlik, maar nie definitief nie, van die polimorfe leukosiet.[1,2]

Sydenham, die groot klinikus uit die 17e eeu, het die teleologiese gesegde: ‚Fever is a mighty engine which Nature brings into the world for the conquest of her enemies' in gebruik gebring.[3] Sedertdien het die klinikus antibiotiese middels gevind, antipiretiese middels (salisilate, steroïdes), verfynde termometers, röntgendiagnostiek, en baie biochemiese bepalings om sy terapie te lei. Die bakterioloog kan hierdie terapie doelgerig instel. Ons betrag nog koorskaarte met 'n gewyde oorgawe, en voel verlig as die inklyne die bekende rooistreep op 98·4°F. na benede verbyskiet.

Dubois[4] het by geleentheid verklaar: ‚Fever is merely a symptom and we are not sure that it is an enemy. It may be a friend'.[4] Hierdie vraag het vele werkers besig gehou. Die antwoorde wat ons kry is dubbelsinnig, dikwels teenstrydig. Die wyse waarop die vraag gestel word, bepaal die vorm van die antwoord. Ons weet byvoorbeeld dat daar tydens koors 'n verhoogde kardiale uitwerping is met 'n daling in bloeddruk as gevolg van vatverwyding in die splanchniese en renale bloedvat-bed.[5] As dié vraag gestel sou word in gevalle met kardiale inkorting, is die antwoord dat koors hier 'n vyand is, want dit is dikwels genoegsaam om so 'n hart in versaking te stort. Antipiretiese middels help ook nie hier nie, want die bloedvatveranderings geskied nogtans.[2] Andersyds mag koors 'n vriend wees in soverre dat dit moontlik 'n faktor mag wees in die hoë voorkoms van spontane remissies in sifilis,[6] en dit is selfs voorgestel dat neurosifilis en ander tersiëre stigmata voorkom in die ongelukkige indiwidue wat tydens die latente fase min tussenkomende koorssiektes gehad het![6]

Klaarblyklik moet ons dus ons toetsvraag noukeurig formuleer, want die teleologiese doelstelling van koors is tog seker gemik om 'n uitwerking te hê in 'n andersins gesonde persoon. Andersyds is daar 'n groot aantal veranderings in die liggaam tydens koors, waaronder veranderings in koolhidraat-metabolisme, plasma proteïen, ysterabsorpsie, vitamien-benodighede, lewerfunksie-proewe, elektroliet-balans, doepa-sensitiwiteit, en die reeds vermelde bloedvat-veranderings.[6] Daar is veranderings in die leukosiete en moontlik in hulle fagositiese vermoë. In ons huidige stand van kennis is dit dikwels onmoontlik om te besluit welke van hierdie veranderings die direkte gevolg of bloot sekondêre aanpassings is by 'n verhoogde liggaamstemperatuur.

In 'n baie onlangse oorsig oor die rol van koors as 'n faktor in die weerstand van die pasiënt teen infeksie,[6] word daarop gewys dat koors òf 'n effek op mikroorganismes en hul produkte kan hê, òf deur 'n wysiging van verskeie sellulêre en humorale meganismes in die pasiënt self werk. *In vitro* studies op organismes kan skynbaar nie gebruik word om verskynsels *in vivo* te verklaar nie. As afkoeling 'n sekere effek op die siekteverloop van 'n koorsige pasiënt het, kan ons nie aanneem dat koors die teenoorgestelde effek sou hê nie.

Verhoogde temperatuur beskerm tot 'n mate teen anafilaktiese skok in marmotte.

Koors verhoog die vatbaarheid vir infeksie met herpes simplex virus. Finland[6] beweer egter dat herpes labialis, wat so volop in pneumokokkale en streptokokkale pneumonieë is, uiters seldsaam, indien ooit, gevind word in stafilokokkale pneumonie. Hierdie kliniese waarneming bring ons weer by die eerste vraag uit: Aktiveer koors die virus, of word weerstand verlaag deur 'n ander faktor wat koors vergesel en net in sommige gevalle teenwoordig en in ander afwesig is? Of word 'n faktor geproduseer wat die pasiënt beskerm teen die virus in dié koorstoestande wat nie gepaard gaan met koorssere nie?

Dat koors op die een of ander wyse tot voordeel mag strek, is deur die eeue heen versigtig aangeneem en het soms die status van dogma verkry.[6]

In die oorsig waarna reeds herhaaldelik verwys is,[6] word die volgende voorbeeld van die voortplanting van gevathede en aforismes omtrent hierdie vraag gegee: In 'n uitstekende artikel waarsku 'n kinderarts tot versigtigheid by die voorskryf van antipiretiese middels. Hy grond sy stelling op 'n versigtige argument, maar sluit af met die aanhaling van Dubois se reeds genoemde aforisme.[4] Kort daarna word die artikel in 'n weekblad opgesom onder die titel ‚Friendly fever' en 'n tydjie daarna verskyn 'n artikel deur 'n geneesheer in 'n maandblad ‚Fever, the heat that heals'.

Is dit nie so dikwels waar dat ons nie glo wat ons bewys nie, maar liewers ‚bewys' wat ons glo? Een ding is seker — ons het geen antwoord op die vraag of koors ons vriend of vyand is nie. Met die ontwikkeling van antibioties-weerstandige organismes en die isolasie van gesuiwerde pirogene waarmee ons koors kan verwek sonder infeksie, wil dit vir ons voorkom of 'n antwoord op hierdie eeue-oue vraag dalk binnekort nodig mag wees.

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THE CONQUEST OF MALARIA

Unique and sensational advances have been made during recent decades in our knowledge of the diseases of warm climates. Among these malaria probably occupies the first place as one of the scourges of mankind, a disease which has affected the course of history itself. The struggle against this widespread disease has taken place on many fronts, and the names of the pioneers who contributed to the knowledge and treatment of malaria will always be remembered. The student of medical history will know that a great deal has been written on this subject. For a balanced and fair presentation, the account by Jaramillo-Arango[1] should, however, be consulted. His scientific record has also considerable literary merit.

The mosquito is the most deadly of enemies in tropical countries. In the course of days or weeks it can spread death to thousands of human beings. It transmits a number of tropical diseases, including malaria and yellow fever. The victims of malaria throughout the world have been calculated at three million a year. There is evidence that malaria was known in the ancient world, and it was thought that it probably contributed in some degree to the fall of the Greek and Roman Empires. It is one of the oldest diseases known to man.

Until the beginning of this century the precise cause of malaria was not established and its mode of spread was one of the intricate problems confronting medical science. In 1880 Alphonse Laveran discovered the haematozoon, but it was only in 1898 that Ronald Ross definitely established that the parasite is transmitted through the mosquito. For centuries there had been suspicion that malaria and other diseases were transmitted by insects. The connection between mosquitoes and this disease was demonstrated by Patrick Manson in his studies on elephantiasis due to filaria organisms, and suggested by Carlos Finlay in his considerations of the transmission of yellow fever.

Space does not permit a full discussion of the details of all the information on which the mosquito-malaria theory came to be based. The demonstration of its truth, urged by Manson, was undertaken with brilliant success by Ronald Ross. This eminent investigator was a poet, writer, philosopher, and mathematician. When on furlough in London from the Indian Medical Service, he was shown the parasite of malaria by Manson and was so intrigued that he was determined to prove the theory of its propagation. Three years later, in 1897 in Calcutta, he discovered in the stomach-wall of a species of mosquito the öocysts of the sexual cycle of the parasite. After this momentous discovery Ross spent the evening composing a poem of thanksgiving. This poem was subsequently printed and published with his other poems.

Further work on the haematozoon of birds enabled Ross to demonstrate the equation mosquito: malaria in all its phases. Manson was in constant correspondence with Ross, advising and encouraging him, and it was he who announced the great news to the scientific world at the meeting of the British Medical Association in Edinburgh in 1898. Two distinguished Italian scientists, Grassi and Bignami, then made the practical demonstration of the malaria-mosquito postulate in man. In Rome, in 1898-1899, they exposed four persons to the bite of mosquitoes incubated from larvae and fed only on malarial blood, and all four contracted the disease. Grassi also had the distinction of showing that it is only the genus *Anopheles* that transmits the disease, and only the female of the species that has the power to infect. The male does not bite the human being. To counter all possible arguments against these newly acquired concepts, Manson decided to demonstrate the experiment in London — a city free from any suspicion of malaria. Infected mosquitoes were sent from Rome and two volunteers, his son and his assistant, both contracted malaria after being bitten by these mosquitoes. The question was solved and all doubts were removed.

There followed a campaign of direct mosquito control which aimed at depriving the mosquito of its breeding places and destroying the larvae wherever the female has succeeded in laying her eggs. Drainage and reclamation of swamps and marshes, the spraying of standing water, and the protection of individuals against mosquitoes have been important methods used. The discovery of insecticides such as dicophane (DDT), gamma benzene hexachloride and others has enhanced the scope of these activities. New antimalarial drugs are nowadays available to give protection to visitors to a malaria zone, and radical cure of infection can be effected easily and economically. Dr. Jaramillo-Arango's account of the mosquito-malaria theory, the history of cinchona, and the progress achieved in the knowledge and treatment of malaria, should be read by everybody who is interested in this fascinating problem.

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DIE SUID-AFRIKAANSE MEDIESE KONGRES, 24-30 SEPTEMBER 1961, KAAPSTAD

Die Drie-en-veertigste Mediese Kongres van die Mediese Vereniging van Suid-Afrika sal gehou word in *Kaapstad* op 24 - 30 September 1961. Volledige besonderhede aangaande die Kongres word van tyd tot tyd in die *Tydskrif* gepubliseer. Alhoewel dit nog betreklik vroegtydig is, word lede wat van plan is om die Kongres by te woon, aangeraai om hul Voornemingsvorms so gou as moontlik in te stuur.

Voornemende besoekers aan die Kongres word ook versoek om dit in die gedagte te hou *dat hotel-akkommodasie in Kaapstad betreklik beperk is* en dat hulle die nodige besprekings so vroeg as moontlik moet maak. Die Reisburo van die Suid-Afrikaanse Spoorweë is aangestel as die amptelike agent vir die doel. Lede word versoek om met hul plaaslike agente, aan wie volledige besonderhede gestuur is, in verbinding te tree in hierdie verband. In die klein plattelandse dorpe sal die naaste stasiemeester die saak hanteer.

Reël u besprekings nou om teleurstelling te voorkom. In die geval van enige moeilikheid, tree asseblief in verbinding met dr. J. C. Coetzee, Saamroeper, Subkomitee vir Verblyf, Kongreskantoor, 43ste Suid-Afrikaanse Mediese Kongres, Posbus 643, Kaapstad.

SALMONELLA STELLENBOSCH

'N NUWE SEROTIPE*

H. D. BREDE, DR. MED. PRIV. DOZ. (KÖLN)

Hoof, Departement van Mikrobiologie, Fakulteit van Geneeskunde, Universiteit van Stellenbosch en Karl Bremer-hospitaal, Bellville, Kp.

Akute diaree-siektes is nog steeds een van die hoofoorsake van sterfte en gebreke in baie lande, veral in Afrika. Die bestryding van hierdie siektes is een van die grootste take van die mikrobiologie en die higiëne. Die taak word egter bemoeilik deur die feit dat alle verwekkers van hierdie siektes nog nie bekend is nie — en teen 'n onbekende vyand is dit swaar om te veg.

Van die 3 mikrobiologiese hoofgroepe wat diareesiektes kan verwek (shigella, salmonella en patogene kolibakterieë), is die salmonella groep die grootste, met tot nou omtrent 480 lede, wat sedert 1935 (ooreenkomstig serologiese en biochemiese eienskappe) na die Kauffmann-White skema ingedeel is in 31 groepe.

'n Tipiese salmonella is 'n bakterie wat deur middel van sweephare beweeg, en dit wys 3 verskillende groepe van antigene:

1. Liggaam- of O-antigene, wat tegelykertyd 'n endotoksien is en nie deur hitte vernietig word nie. In die Kauffmann-White skema word hulle deur syfers aangedui. Tot nou is daar 50 verskillende O-antigene bekend, wat almal groepspesifiek is.

2. Spesifieke sweephaar- of H-antigene, aangedui deur klein letters. Hulle is stamspesifiek. Tot nou is daar 62 verskillendes bekend.

3. Onspesifieke sweephaar- of H-antigene, aangedui deur die syfers 1 tot 7.

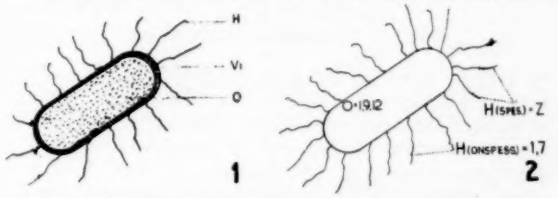
Deur 'n kombinasie van hierdie 3 verskillende antigeengroepe verkry elke salmonella 'n tipiese antigeenformule, bv.

Salmonella typhi : 9, 12, (vi) : d : —
Salmonella kaapstad : 4, 12 : e h : 1, 7.

Die *Salmonella kaapstad*, wat in 1941 ontdek is, het die O-antigene 4 en 12 en die sweephaarantigene e, h en 1, 7. Omdat die O-antigene tegelyk 'n endotoksien is, het die *Salmonella kaapstad* dieselfde endotoksien as 'n paratifus B (Schottmüller), en dit behoort derhalwe aan die B-groep van die Kauffmann-White skema.

Op 2 Maart 1960 het ons in die mikrobiologiese-laboratorium van die Karl Bremer-hospitaal 'n stoelgangmonster ontvang van 'n nie-Blanke, 38-jarige pasiënt uit die omgewing van Stellenbosch. By toelating het hy alreeds 2 maande lank 'n sterk diaree gehad met bloed en slym in sy ontlasting. 'n Tifoïed- en amebeondersoek is versoek. Die direkte ondersoeke van hierdie monster het 'n paar etterselle, maar geen rooiselle, amebe, siste, wurmeiers, of ander parasiete getoon nie. Die resultaat van die kultuur was van 'n *E. koli* en daarby 'n klein hoeveelheid *Proteus mirabilis*, 'n salmonella met die formule: 1, 9, 12 : z : 1, 7. Hierdie formule was in die Kauffmann-White skema nie te vind nie, sodat daar 'n moontlikheid van 'n nuwe salmonella was. Vir bevestiging het ons die stam aan die Salmonella-sentrum in London gestuur, waarvandaan verdere subkulture aan die internasionale sentrale in Kopenhagen en aan die sentrum in Atlanta (VSA) gestuur is. Die resultaat van al drie Salmonella-sentrales was in ooreenstemming met mekaar:

Hierdie Salmonella is 'n nuwe tiepe met die formule:



Afb.1. Antigeniese samestelling van 'n salmonella: H= sweephaarantigeen, Vi en O=somatiese antigene.
Afb. 2. Salmonella stellenbosch 1, 9, 12 : z : 1, 7.

1, 9, : z : 1, 7, en die naam Stellenbosch is daaraan gegee.

Salmonella stellenbosch is nou die jongste Suid-Afrikaanse salmonella. Dit behoort aan die groep D-1 van die Kauffmann-White skema. Dit het 2 endotoksiene (9 en 12) gemeenskaplik met *S. typhi* en is derhalwe geen onskuldige organisme nie, want hierdie 2 endoktoksiene is polisaccharose-lipoïed-proteïen-komplekse wat hoë koors, bloedstuwing, bloedings, nekrose, en beskadiging van die endoteel kan veroorsaak. Die volgende Tabel wys 'n kort lys van 'n paar Suid-Afrikaanse salmonellas:

		H-antigene	
Salmonella	*O-antigene*	*Spesifiek*	*Onspesifiek*
S. kaapstad	4, 12	e, h	1, 7
S. durban	9, 12	a	e, n, z_{15}
S. pretoria	11	k	1, 2
S. johannesburg	1, 40	b	e, n, x
S. stellenbosch	1, 9, 12	z	1, 7

Die antibiogram van ons *Salmonella stellenbosch* is 'n tipiese Salmonella-antibiogram:

Antibiogram van *Salmonella stellenbosch*

Antibiotikum	*Sensitiwiteit*
Penisillien	weerstandig
Streptomisien	+
Chloramfenikol	+
Tetrasiklien	+
Chlor-tetrasiklien	+
Oksitetrasiklien	+
Eritromisien	weerstandig
Ilotisien	weerstandig
Kanamisien	weerstandig
Neomisien	+
Albamisien	weerstandig

SUMMARY

A new serotype, *Salmonella stellenbosch* (1, 9, 12 : z : 1, 7.) was isolated from the faeces of a Coloured man who,

* Lesing gelewer tydens die Vierde Jaardag van die Mediese Skool van die Universiteit van Stellenbosch en die Karl Bremer-hospitaal Bellville, Kp., op 8 en 9 September 1960.

for 2 months, had suffered from severe diarrhoeas. The patient came from the environment of Stellenbosch.

The culture possessed biochemical characteristics typical of the salmonella group.

On serological examination *Salmonella stellenbosch* was strongly agglutinated by the O-antisera 1, 9 and 12. Examination of the H antigen showed that the organism was diphasic. Phase 1 was agglutinated by z-antiserum. Phase 2 was agglutinated by the unspecific antisera 1 and 7. Phase 2 (1, 7) of *Salmonella stellenbosch* is identical with phase 2 (1, 7) of *Salmonella kaapstad*.

The antibiogram of *Salmonella stellenbosch* is typical for a salmonella. The strain is resistant to penicillin, erythromycin, ilotycin, kanamycin and albamycin, but sensitive to streptomycin, chloramphenicol, and the tetracyclines.

Ek wil my dank uitspreek teenoor my hele tegniese personeel. Graag wil ek ook Dr. Joan Taylor van Londen, Prof. F. Kauffmann van Kopenhagen, en Dr. P. R. Edwards van Georgia bedank vir die bevestiging van die nuwe ontdekking.

WAGES, DIET AND NUTRITIONAL STATE

A NUTRITIONAL STUDY OF TWO GROUPS OF BETTER-PAID FACTORY WORKERS IN DURBAN

J. H. ABRAMSON,* B.Sc., M.B., B.Ch.

Department of Social, Preventive and Family Medicine, University of Natal

A recent study of low-paid, mainly migrant, African labourers in and near Durban revealed a high prevalence of various signs of malnutrition. This was associated with a poor standard of diet and an unsatisfactory level of nutritional knowledge. On the basis of these findings, 3 allied measures were recommended: canteen feeding, increased wages, and the health education of workers.[1]

The present report deals with a subsequent study, in June 1960, of 2 groups of slightly better-paid Durban workers: a group of African men in a manufacturing industry, and a group of Indian men at a foundry and engineering works.

SUBJECTS AND METHODS

Each group comprised 40 workers, aged 20 - 39 years, employed for at least 6 months. Workers with possible privileges, such as cooks, and also men under treatment for tuberculosis, were excluded. At the first factory, the men selected were matched in age with low-paid workers who had previously been randomly selected for study at the same factory. Apart from this qualification, the selection of workers was random.

The African workers were predominantly Zulu (82%). Their mean age was 31·6 years. Most (65%) were living away from their wives or parental families. Almost all (98%) had spent most of their childhood in a rural area, but most (78%) had spent 10 years or more in town. Most were in fairly stable employment; they had been in their present job, on average (median figure), for 5·5 years. Their mean cash wage, according to their own statements, was £4 7s. 0d. per week. All were engaged in manual work, usually not strenuous.

The Indian workers were mainly Tamil- (52%) or Hindustani-speaking (30%). Their mean age was 29·7 years. Almost all (98%) were living with their wives or parental families. The majority (85%) had spent most of their childhood in a town, and 90% had spent 10 or more years in town. They too were in stable employment, their median period in their present job being 5·0 years. Their mean cash wage was £3 14s. 0d. per week. All were engaged in manual work, very strenuous in some cases. The men examined were not housed by their employers.

The methods used have been detailed elsewhere.[1,2] The chi-square test, with Yates' correction, was used to assess the statistical significance of the findings. The 5% level of probability was used.

FINDINGS

Better-paid African Workers

There was considerable evidence of malnutrition among these men (Table I), the lesions being consistent with the consumption of a high-maize diet deficient in animal tissues, milk, yellow and green vegetables, and fruit.

Their nutritional state appeared, however, to be better than that of low-paid African labourers in the same age-group, examined a few weeks previously.[1] These low-paid labourers comprised 4 groups of 40 men each, employed at 4 Durban factories, and not provided with rations. Their mean weekly wage was £2 19s. 11d., or £1 7s. 1d. less than that of the better-paid men. A number of signs of malnutrition were less prevalent among the better-paid workers (Table I). In several instances, statistical significance was reached. Only 1 sign, namely follicular enlargement, a sign of doubtful significance, was significantly commoner among the better-paid men.

The men's answers to a series of questions indicated that their diet was unsatisfactory. The number of days per week on which the following foods were usually taken (median figures) was: meat, 4·5; green or yellow vegetables, 4·5; milk (in porridge), 2; milk (as beverage), 1; *amasi* (sour milk), 1; fruit, 1; fish, 0; and eggs, 0. Their stable cereal was maize. Their diet was, however, considerably better than that of the low-paid workers, with particular regard to their consumption of meat, milk, fruit, and green/yellow vegetables (Table II).

When these men were compared with a group of 40 low-paid men employed at the same factory, similar dietary and nutritional differences were found. Patronage of the works canteen was similar for both groups.

Asked what food they usually took in the morning, before work, 20% said they took nothing, 8% tea only, 70% cereal foods with or without tea, and only 2% a more substantial breakfast. These findings were similar to those among the low-paid workers.

A series of questions revealed that the men's standard of knowledge concerning the relationship of food to health was in some respects unsatisfactory. For example, 80% regarded *phuthu* (thick maize porridge) as being healthier than bread; 28% did not consider *amasi* (sour milk) to be healthier than *mahewu* (fermented maize gruel); and 30% did not consider potato to be healthier than mealie-rice. These findings did not differ significantly from those among the low-paid workers, for whom the corresponding figures were 66%, 38% and 44% respectively.

Indian Workers

There was considerable evidence of malnutrition among the Indian workers (Table I). This finding conforms with that of Lapping, who found evidence of malnutrition in 89% of a sample of Indian factory workers.[7]

Compared with the low-paid African workers, whose mean weekly wage was 14s. 1d. less, some signs of malnutrition were significantly less prevalent among the Indian men; there were fewer men with lingual papillary changes, skin xerosis, mosaic of the legs, and low total serum-protein concentrations. Fewer of the Indian men were overweight in

* Present address: Department of Social Medicine, Hebrew University-Haddash Medical School, Jerusalem, Israel.

TABLE I. PREVALENCE % OF SIGNS OF MALNUTRITION AMONG BETTER-PAID WORKERS IN DURBAN, WITH COMPARATIVE FIGURES FOR LOW-PAID DURBAN WORKERS

	Better-paid workers		*Low-paid African workers*[1]	*Explanatory notes*
	African no. : 40	*Indian no. : 40*	*no. : 160*	
Tongue signs:				
Papillary changes	72·5*	70·0*	89·4	Papillary atrophy and/or hypertrophy/hyperaemia, of any degree. Usually at the tip and sides. 'Geographism' excluded. As atrophy and hypertrophy/hyperaemia may under certain conditions be manifestations of the same pathology, their combined prevalence is given, as well as the separate prevalence of each (below).
Papillary atrophy	15·0*†	42·5*	62·5	Of any degree. Usually at the tip and sides. 'Geographism' excluded.
Papillary hypertrophy and/or hyperaemia	57·5	62·5	65·6	Of any degree.
Fissuring	55·0	72·5	68·8	Of any degree.
Magenta	0	0	8·8	Over 0% is regarded as abnormal.[3]
Indentations	100·0	100·0	95·6	Tooth impressions visible at sides or tip.
Lip signs:				
Lip dryness	65·0	50·0	63·8	Any degree of dryness, of lips as a whole or at angles.
Angular stomatitis	2·5	0	8·1	Sodden or cracked angles. Over 5% is regarded as abnormal.[3]
Gum signs:				
Gingivitis	47·5	62·5	65·0	Any degree of softness and swelling or redness, with or without pus.
Pyorrhoea	37·5	45·0	56·2	Pus obvious, or appearing when gums are pressed lightly.
Bleeding	0	2·5	4·4	Bleeding, spontaneous or on light pressure.
*Skin signs:***				
Xerosis	35·0*	35·0*	89·2	Score[1] based on degree and extent of dryness, dullness, increased reticulation and flaking on face, trunk, shoulders and arms, and thighs.[2] Men with scores of under 9 (i.e. mild or localized signs) are excluded.
Xerosis, marked (thighs)	5·0	0*	16·7	Marked signs on thighs (score of 8 or over for this skin area). Separate figures provided for thighs, which are relatively protected from occupational trauma.
Phrynoderma	32·5	50·0	44·2	Score based on degree and extent of follicular keratosis[4] on trunk, shoulders and arms and thighs, excluding elbow, knee and trochanteric regions, and sternal and interscapular areas. Score based on degree and extent of lesion.[2] Men with scores of under 2 (i.e. mild localized signs) are excluded.
Phrynoderma, moderate or marked (thighs)	15·0	15·0	27·5	Men with scores of 2 or more for this skin area. Excluding knee and trochanteric regions.
Follicular enlargement	55·0*†	22·5	33·3	'Permanent gooseflesh'[4] of any degree in areas listed above, under 'phrynoderma'.
Dyssebacea/folliculosis	50·0	27·5	45·0	Follicles enlarged or plugged with sebum, on face, sternal or interscapular areas. Score based on degree and extent of lesion.[2] Men with scores of under 4 are excluded.
Mosaic, legs	37·5*	27·5*	78·3	'Crackled skin'.[4] Mild lesions are excluded.
Oedema:	0	0	1·2	Definite pitting on pressure over both ankles. Over 0% is regarded as abnormal.[3]
Leanness:	45·0	30·0	30·0	Arm skinfold thickness of under 5·0 mm. Measured half-way down the back of the right arm, over the triceps, with a Harpenden caliper.[5]
Underweight:	17·5†	72·5*	20·6	Weight at least 10% below the standard weight of a US male of the same age and height.[3]
Overweight:	15·0†	0*	16·2	Weight at least 10% above the standard weight of a US male of the same age and height.[3]
Low total serum protein (below 7·5 g. per 100 ml.):	10·3* (39)	17·9* (39)	52·0 (150)	Although there is no clarity on the precise significance of total serum-protein values, there is evidence of a relationship between malnutrition and low values among Durban Africans.[6] The figures in parentheses indicate the number of subjects.

* Significantly different from the figure for low-paid workers.
† Significantly different from the figure for Indian workers.
** The figures for low-paid workers apply to only 120 men. One group of 40 men, many of whom were covered with dust which was difficult to remove completely, were excluded.

TABLE II. FREQUENCY WITH WHICH VARIOUS FOODS ARE TAKEN. TWO GROUPS OF BETTER-PAID WORKERS IN DURBAN, COMPARED WITH LOW-PAID DURBAN WORKERS

Food and usual frequency per week	*Percentage of workers*		
	Better-paid workers		*Low-paid African workers***
	African no. : 40	*Indian no. : 40*	*no. : 160*
Meat, 3 or more days	77·5*†	20·0*	48·1
Milk (as beverage), 4 or more days	30·0*	10·0	10·6
Milk (with porridge), 1 or more days	60·0*†	5·0	16·2
Meat or milk (as beverage or with porridge), 7 days	60·0*†	5·0*	22·5
Fish, 1 or more days	25·0†	65·0*	18·1
Sour milk, 2 or more days	45·0*†	0*	22·5
Eggs, 1 or more days	12·5†	52·5*	6·9
Fruit, 1 or more days	57·5*†	100·0*	15·6
Green/yellow vegetables, 3 or more days	70·0*†	97·5*	28·1

* Significantly different from the figure for low-paid workers.
† Significantly different from the figure for Indian workers.
** Figures derived from study by Abramson and Gampel.[1]

relation to a US standard, and more were underweight; this last finding may, at least in part, reflect a racial difference.

The usual diet of the Indian workers was unsatisfactory in many respects. The number of days per week on which the following foods were taken (median figures) was: green or yellow vegetables, 6; meat, 2; fruit, 2; fish, 1; eggs, 1; milk (as beverage), 0; milk (in porridge), 0; and sour milk, 0. Their staple cereal was maize. Their diet was in some respects better than that of the low-paid African workers (Table II). They took green/yellow vegetables, fruit, fish and eggs more frequently. Meat and sour milk, however, were taken less often. There was no significant difference in respect of milk taken as a beverage or with porridge.

Few of the men had a satisfactory breakfast before starting work. There were 58% who had no food, or tea only, and 32% who had cereal foods, with or without a beverage.

The nutritional state of the Indian workers was, in most respects, fairly similar to that of the better-paid African men, whose mean weekly wage was 13s. more. There were only 2 significant differences in the mucocutaneous signs: the Indian workers had a higher prevalence of lingual papillary atrophy, and a lower prevalence of follicular enlargement. In addition, more of the Indian workers were underweight, and fewer overweight (Table I).

Their diet differed considerably from that of the better-paid African men (Table II). They took meat and milk less often, but green/yellow vegetables, fruit, fish, and eggs more often.

The Indian workers' knowledge of the value of food, like that of the African workers, was not satisfactory. For example, 58% regarded mealie-meal as being healthier than bread, and 62% did not consider potato to be healthier than mealie-rice.

DISCUSSION

It is apparent that there was considerable malnutrition among these slightly better-paid workers, associated with a poor standard of diet and nutritional knowledge. However, both their nutritional state and their diet were, in general, superior to those of the low-paid workers studied previously. The contrast was clearer in respect of the better-paid African workers, where the wage disparity was greater, and the issue was not clouded by cultural differences in food customs or possible racial differences in body-build.

Before concluding that the wage difference was the main factor accounting for the nutritional superiority of the better-paid African workers, alternative explanations had to be considered. The 2 African groups did not differ notably in their mean age, ethnic composition, or marital state. In each group there were few men (2%) with gainfully occupied wives. Family size was similar; the better-paid men had, on average, 2·3 living children per married man; and the low-paid men, 2·4. In each group, 98% had spent most of their childhood in a rural area. In both groups, the majority had been in town for a considerable time; 100% of the better-paid men had been in town for 5 or more years, and 78% for 10 or more years; the corresponding figures for the low-paid men were 91% and 63%. Both the better-paid and the low-paid were in fairly stable employment. They had spent on average (median figures), 5·5 and 5·7 years respectively in their current jobs, and 43% and 44%, respectively, had been in the same employment for 6 or more years.

Three differences were however apparent between the 2 groups. First, the better-paid men were better educated; 75% had been to school, compared with 42% of the low-paid men; 55% had had over 4 years of schooling, compared with 22% of the low-paid men. As the 2 groups did not, however, differ significantly in their responses to questions about the relationship of diet to health, the difference in formal education did not appear to be crucial in this context. Secondly, among the better-paid men there were significantly fewer who were living away from their wives or parental families (65% compared with 95%). In view of this finding, such men were compared with men who were living with their families. Among the better-paid men there were only minor differences between these 2 smaller sub-groups — either in their diet or in their nutritional state. Thirdly, although the better-paid men were engaged in manual work, this work was, by and large, somewhat less strenuous than that of the low-paid men. Had their usual dietaries been similar, this difference might have been considered an important determinant of their nutritional difference. In the presence of marked dietary differences, however, it was considered unlikely that differences in exertion could be considered a major factor.

The findings thus suggested that the higher wage received by these men was in fact the main factor accounting for their better diet and nutritional state. It is apparently not true that 'if African workers are paid higher wages, they will not spend more on food'. On the contrary, it is likely that, as might have been expected, wage increases will appreciably improve the nutritional state of workers.

Health Education

The findings confirm, however, that the raising of wages should be accompanied by health education. Despite the higher educational standard of the better-paid workers, who had, on average, passed Std. III or IV (median educational levels of African and Indian workers respectively), their knowledge concerning the health value of various foods was no better than that of the low-paid workers, 58% of whom had not been to school at all.

Experience has shown that it is difficult to make effective educational contact with workers during their leisure hours. Workers are most easily contacted at their place of work. It has previously been suggested that employers or employers' organizations should consider the employment of health educators for this purpose, both to modify

workers' nutritional knowledge and habits, and to perform other functions aimed at improving the health of workers and their families.[1]

In view of the obvious importance of such a measure, it is necessary to review the availability of trained health educators in this country. It must be stressed that health education can only be effectively performed by a person trained in this work. Posters, pamphlets, films and 'health newsletters' are educational tools, not substitutes for an educator. The effectiveness of such aids depends on the skill of the educator using them. Their use should form part of a planned and integrated programme, and should, where possible, be supplemented by informal discussions of their subject-matter. It has been shown that even literate people may completely misinterpret the message of a poster.[8]

In 1944 the National Health Services Commission recommended that, in view of the rôle of ignorance as a cause of ill-health in South Africa, 'the National Health Service of the future should become the vehicle of health teaching by the entire technical personnel of the service, including a few who should be specially trained for this work'.[9] Subsequently, a governmental institute (presently the Institute of Family and Community Health of the Natal Provincial Administration*) was set up in Durban, at which, *inter alia*, 'health assistants' (now styled 'health educators') of all ethnic groups were trained on a large scale. Initially they were given 6 months' training, which in 1949 was expanded to a 3-year course. As a result of policy changes, this formal training was stopped in 1954. Although there are at present a number of trained health educators, some of whom might be willing to take up employment in industry, there is now no formal training of this kind in South Africa, apart from the in-service training of staff members of a handful of local health agencies.

Elsewhere, health educators have achieved professional status. In South Africa, where it has been stated that ignorance is a close rival to, if it does not actually exceed, poverty as a cause of disease,[10] there is paradoxically little appreciation of the need for such personnel,[11] whether in industry, in hospitals, or in neighbourhood health services.

Canteen Feeding

It is probable that employers could, by providing suitable food for workers at their place of work, reduce the prevalence of malnutrition. The fact that so few men have a satisfactory meal before starting work, reinforces the likely value of the provision of mid-morning or midday meals.

However, canteen feeding presents problems. A recent report on feeding schemes for non-Europeans in Durban industries states:

'1. Canteens are not generally successful. Where they are reasonably successful the success has been achieved only over a long period. No canteen has ever achieved 100% attendance.

'2. Experience of various firms also indicated that there is an invariable tendency on the part of the Native to require payment in lieu of the value of the meals. Bantu firmly believe that they can buy better than their employers and would take 6d. for a meal costing their employers 1s. 3d. in the belief that money enables them to buy to the best advantage.

'3. Industrialists have found that where Natives are dissatisfied with matters other than food, such as pay, work conditions, etc., there is a tendency immediately to boycott the canteen in the belief that this injures the firm and would help to further their claim to have their disputes settled.

'4. Where prices of the ingredients in preparing meals are from time to time fluctuating and the management substitute an equally nourishing ingredient, the Natives who patronize the canteen regard this as an infringement of their rights and agitate for the original diet irrespective of the cost'.[12]

A memorandum dealing with a survey of Natal canteen schemes states that 'Native employees in general did not take kindly to being fed by their employers . . . . The Natives appear genuinely to believe that some ulterior motive prompts the employer to feed him, and even where they are fed at no cost to themselves, representations are not infrequently made by the Natives to the employers to withdraw the feeding scheme and instead pay to the Natives the amount expended by the employer for such scheme . . . There are factories that provide a well-balanced ration of palatable food at a very sub-economic cost to the Native, where the amenity provided is boycotted by the Natives, but readily patronized by the other races. Even . . . in the dairy industry, where it is normal to issue a free ration of milk and allow additional milk to be purchased at well below retail price, by no means all the Natives take advantage of these facilities'.[13]

These undoubted difficulties do not lessen the need for such schemes. Rather, they underline the need for concurrent health education concerning the importance to health of food in general, and of certain foods in particular. In the words of the memorandum cited above, employers are advised 'that in their own interests, greater efforts should be made by way of education, and by making the meals more attractive, to persuade the employees to take greater advantage of the amenities of feeding'.[13]

The Worker's Family

This study has provided further support for the value of 3 allied measures: increased wages, canteen feeding, and the health education of workers. Such measures are likely to have an impact, not only on the health of workers, but on that of their families.

The likely effect of increased wages on the health of workers' families needs no emphasis. In the better-paid and low-paid African groups and the Indian group, 82%, 66% and 68% respectively of the men were married, the mean number of living children per married man being 2·3, 2·4 and 2·3. In each group, only 2% of the men had gainfully employed wives. Almost half (42%) of the Indian workers had dependants other than their wives and children; the African workers were not questioned about their other dependants.

A number of recent publications have pointed out the disparity between the average income of African and

* This Institute closed down on 31 January 1961, after this article was written.

Indian families, and their minimal needs for healthy living.[14-17] In 1958 it was estimated that the 'poverty line' for a non-White family of man, wife and 3 children in Durban, i.e. the amount needed to provide the minimum essentials for living, was £4 8s. 10d. per week, without allowing for rent or transport.[18] Including expenditure on these 2 items, the average income of both groups of 'better-paid' workers fell short of this figure.

Important too, is the possible effect of health education on the food habits of workers' families. Commonly the man controls the purse-strings of the home, and often he determines not only what should be spent on food, but also how it should be spent. Particularly if men learn, not only what they themselves should eat, but also what women and children should eat, it is likely that they will effect changes in the family diet. Canteen feeding, together with health education, may appreciably alter food practices in the home. Workers who learn to eat and relish new dishes may introduce them into their own homes. In a study of two US plants, it was shown 'that a well-run in-plant nutrition education program can be effective in changing eating habits, when integrated with the plant food services. Sixty per cent of the workers eating in the cafeteria of one plant indicated changes in their dietary practices since onset of the nutrition program. Twenty-five per cent of this group disclosed an extension of the effects of the nutrition program into the home'.[19]

SUMMARY

A study was undertaken, in June 1960, of the nutritional state and diet of groups of better-paid African and Indian manual workers in Durban.

Their nutritional state was found to be superior to that of low-paid African labourers examined previously.

The diet of the better-paid African men was superior to that of the low-paid labourers.

The men's standard of nutritional knowledge was poor.

The findings are considered to support the value of 3 allied measures: increased wages, canteen feeding, and health education.

We are indebted to the managements and men for their interest and cooperation, to Sister T. Triegaardt, health educators A. T. Mbombo, J. Francis, B. Gajadhur, E. F. Govender, A. C. Jacob, J. Mngadi, M. Ngidi, W. S. Nkuhlu, R. Philips and I. I. Pitso, medical recorder S. J. Maharaj, and nurse-aids E. Handley and A. Perumal for their assistance, and to Dr. S. M. Joubert of the Department of Pathology, University of Natal, for the serum-protein estimations.

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AMPTELIKE AANKONDIGING : OFFICIAL ANNOUNCEMENT

SUID-AFRIKAANSE NASIONALE SIEKTE- EN ONGEVALLE-VERSEKERINGSMAATSKAPPY BEPERK

Op 'n vergadering van die Federale Raad wat in Oktober 1960 gehou is, is goedkeuring toegestaan aan 'n aantal groepe wat deur SANSOM geadministreer word. Die name van die groepe is gepubliseer in 'n byvoegsel tot die *Tydskrif* van 26 November 1960. Lede van hierdie omsluitende groep is geregtig op behandeling teen die voorkeurtarief.

Op dieselfde vergadering van die Federale Raad is besluit dat die voorkeurtarief toegestaan sal word aan lede van groepe wat geadministreer word deur versekeringsmaatskappye, en van wie die inkomste onder 'n ‚perk' val waarop nog besluit moes word. Na samesprekings het die uitvoerende komitee van die Federale Raad besluit om die ‚perk' op R4,600 vas te stel. Goedkeuring is aan SANSOM toegestaan om so 'n groep te vorm—wat dan ook nou gedoen is. Lede van SANSOM met 'n inkomste van R4,600 is dus ook geregtig op behandeling teen die voorkeurtarief.

Die lidmaatskapkaarte van persone met 'n inkomste bo die ‚perk', wat deur SANSOM verseker is, sal so gemerk word om aan te dui dat hulle private pasiënte is. Sulke lede sal onderhewig wees aan die gebruiklike gelde vir private pasiënte en sal persoonlik verantwoordelik wees aan die dokter vir die betaling van sy rekening.

As 'n lid van SANSOM sy kaart nie op versoek kan wys nie, is die kaart moontlik ingeroep vir endossement.

Tot tyd en wyl dat al die kaarte behoorlik gemerk is, word lede van die Vereniging versoek om hul diskresie te gebruik ten opsigte van die gelde wat hulle in sulke gevalle vra.

SOUTH AFRICAN NATIONAL SICKNESS AND ACCIDENT INSURANCE COMPANY LIMITED

At the meeting of Federal Council held in October 1960, approval was granted to a number of groups administered by SANSOM. The names of the groups were published in a Supplement to the *Journal* of 26 November 1960. Members of this overall group are eligible for treatment at the preferential tariff.

At the same meeting of Federal Council it was agreed that the preferential tariff would be granted to groups administered by insurance companies whose members had incomes below a 'ceiling which was still to be determined. After consultation, the Executive Committee of Federal Council agreed on the 'ceiling' figure of R4,600. Approval was granted to SANSOM to establish such a group, which it has proceeded to do. Members of SANSOM with incomes below R4,600 are therefore also eligible for treatment at the preferential tariff.

Persons with incomes above the 'ceiling' who are insured with SANSOM will have their membership cards marked to indicate that they are private patients. Such members will be subject to the customary fees for private patients and will be personally responsible to the doctor for payment of his account.

If a member of SANSOM cannot produce his card when requested, it may possibly have been called in for endorsement.

Until such time as all the cards have been appropriately marked, members of the Association are requested to use their discretion as to the fees they will charge in such cases.

SANSOM het beloof om 'n oog te hou op die inkomste van sy lede. As enige praktisyn rede het om te dink dat 'n lid van SANSOM, wat hom as 'n mediese-hulp pasiënt voordoen, 'n inkomste het wat bo die ‚perk' is, moet navraag by SANSOM gedoen word, wat die saak dan sal ondersoek en adviseer.

Dit moet hier beklemtoon word dat die goedkeuring van die Vereniging nie teruggetrek is van die groepe wat deur SANSOM geadministreer word nie.

L. M. Marchand
Medesekretaris

Plaza-gebou 28
Pretoria
22 Maart 1961

SANSOM has promised to keep a check on the incomes of its members. If any practitioner has reason to believe that a member of SANSOM, presenting himself as a medical aid patient, is in receipt of an income above the 'ceiling', he may enquire from SANSOM who will investigate and advise.

It must be emphasized here that the approval of the Association has not been withdrawn from the groups administered by SANSOM

L. M. Marchand
Associate Secretary.

28 Plaza Building
Pretoria
22 March 1961

SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL

EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE MEDICAL, DENTAL AND PHARMACY ACT, 1928 (ACT NO. 13 OF 1928, AS AMENDED)

Provision is made in Section 74 (*b*) of the abovementioned Act whereby, in certain circumstances, persons who are not permanently resident in South Africa, may be exempted by the Minister of Health, in consultation with the Council, from the registration requirements of the Act for a specified period.

The Council requires *inter alia* that applications for exemption from the registration requirements of the Act, in terms of Section 74 (*b*) thereof, should be lodged with the Council at least *three months* before the period in respect of which exemption is applied for. The reason for this is to enable the Executive Committee of the Council to give the necessary attention to the matter and to make a recommendation to the Minister. Ample time should also be allowed for obtaining the approval of an exemption from the Minister, since he may not always be available to attend to administrative procedures of this nature.

The Executive Committee of the Council has found that in the majority of applications for exemption which have reached the Council, the above requirement has not been complied with. This may be due to the fact that this particular requirement of the Council is not well known to the profession and the official bodies sponsoring applications for exemption from the registration requirements of the Act.

At the most recent meeting of the Executive Committee, it was decided that the Editors of the various Medical and Dental Journals in South Africa be requested to publish in their respective Journals the policy of the Council in connection with the procedure to be adopted for applications for exemption under the provisions of Section 74 (*b*) of Act 13 of 1928, as amended, with special emphasis on the fact that all applications for exemption must be lodged with the Council at least three months before the period in respect of which exemption is applied for.

The Council's policy in connection with the procedure to be adopted for applications under Section 74 of the Act is as follows:

1. Provision is made in Section 74 (*b*) of the Act whereby, in certain circumstances, persons may be exempted from the registration requirements of the Act. This Section provides that the Minister of Health, after consulting the Council, may exempt from the registration requirements of the Act, any person not permanently resident in the Union, who is engaged

(*i*) solely in medical or pharmaceutical research work;

(*ii*) in postgraduate work under the control or direction of any university in the Union in which a faculty of medicine has been established, or

(*iii*) in demonstrating to persons registered under the Act, or the Nursing Act, 1944, medical, surgical, dental or pharmaceutical techniques,

and such exemption shall be valid for such period only as the Minister may prescribe.

2. The discretion conferred on the Minister by the above section could not have been intended for all persons who hold medical qualifications and who may wish to come to the Union to perform acts pertaining to the calling of a medical practitioner. The principal element of the Ministerial discretion must be whether the scientific value of the person's activity is such that it warrants placing him beyond the statutory control which has been established by Act of Parliament for the whole profession. It would be unwarranted to involve the discretion of the Minister for other cases. Consequently, in submitting applications to the Council for a recommendation to the Minister that a particular person be exempted from the registration requirements of the Act, a reasoned submission should be made as to the scientific value of the person's activity during the period of his exemption.

3. In addition to the above submission, all applications for exemption to the Council should contain the undernoted information:

(*a*) full names of person in respect of whom exemption is desired;

(*b*) his qualifications;

(*c*) the period for which exemption is desired;

(*d*) an assurance by the body sponsoring the application that the person, if exempted, will be apprised of the provisions of the Act relating to the performance of acts pertaining to the calling of a medical practitioner or a dentist, and that the body will ensure that a person recommended for exemption will not perform any such act until such time as the exemption has been duly signed by the Minister. The Council desires to stress the assurance required in this respect, in as much as it is most anxious that any possible embarrassment to our distinguished guests should be avoided.

4. All applications for exemption must be lodged at least three months before the period in respect of which exemption is applied for. This is to enable the Council's Executive Committee to consider the application, to come to a conclusion regarding it, and to make a recommendation thereanent to the Minister. It should be borne in mind that the Minister may not always be available to attend to administrative procedures of this nature, and ample time should be allowed for obtaining his approval of an exemption. The time factor is of the essence of an application, and will be departed from in exceptional circumstances only.

5. If a person is exempted from the registration requirements of the Act in terms of Section 74 thereof, he can be granted exemption only for the specific purposes set out in that Section, and he may then only do what the law allows him to do. He cannot be exempted from registration for the purpose of consultations or seeing and treating patients.

6. Provision, however, is made in the Act whereby a person who has come, or intends to come, to the Union at the request of a medical practitioner who is registered under the Act, for the purpose of examining or treating an individual patient, and who intends to return to the counry of his domicile as soon as he has so examined or treated such patient may if otherwise entitled to registration, be registered as a medical practitioner, notwithstanding the fact that he is not domiciled in the Union, and such registration shall be effective for a period not exceeding 30 days. A person registered under these provisions of the Act shall not examine or treat any patient other than the particular patient in connection with whose examination or treatment he has been so registered and such other patients as he may specifically be authorized by the Council to examine or treat.

7. Medical practitioners from other countries cannot examine or treat patients in South Africa unless they are registered specifically for the purpose of examining and treating such patients in terms of the provisions referred to above.

8. In all other cases the provisions of Section 34 of the Medical, Dental and Pharmacy Act apply.

Section 34 of the Act provides that:

'34. (1) Any person not registered as a medical practitioner or as an intern who—

(*a*) for gain, practises as a medical practitioner (whether or not purporting to be registered) or performs any act specially pertaining to the calling of a medical practitioner; or

(*b*) pretends, or by any means whatsoever holds himself out to be a medical practitioner or intern (whether or not purporting to be registered), or uses the name of medical practitioner or intern or any name, title, description or symbol indicating or calculated to lead persons to infer that he possesses a degree, diploma or other qualification as a medical practitioner, doctor of medicine, physician, surgeon, accoucheur or intern, or that he is registered as a medical practitioner or intern under this Act,

shall be guilty of an offence and liable on conviction to a fine not exceeding one hundred pounds.'

9. A person not registered under the Act may therefore not practise as a medical practitioner or perform any acts specially pertaining to the calling of a medical practitioner. Such a person may also not hold himself out to be a medical practitioner. If he were to do so he would be contravening the law.

THE MEDICAL ASSOCIATION OF SOUTH AFRICA

MINUTES OF AN EXTRAORDINARY GENERAL MEETING OF THE MEDICAL ASSOCIATION OF SOUTH AFRICA, HELD IN THE FESTIVAL HALL, MAITLAND HOTEL BLOEMFONTEIN, ON WEDNESDAY, 8 MARCH 1961

Present: The President (Dr. W. Chapman), the Chairman of Council (Dr. E. W. Turton), and 46 members.

Prior to the commencement of the meeting, proxies were handed in as follows: Dr. A. Agranat (Southern Transvaal Branch) 266; Dr. A. P. Albert (Cape Midland Branch) 55; Mr. B. A. Armitage (Natal Inland Branch) 19; Dr. H. Blumberg (Western Transvaal Branch) 4; Dr. L. Botha (Soutpansberg Branch) 15; Dr. J. H. de Jager (O.F.S. and Basutoland Branch) 8; Dr. J. T. M. de Villiers (Northern Transvaal Branch) 134; Dr. von W. Eybers (O.F.S. and Basutoland Branch) 1; Dr. F. Gillwald (O.F.S. Goldfields Branch) 21; Dr. K. A. Gough (Eastern Transvaal Branch) 16; Prof. H. Grant-Whyte (Natal Coastal Branch) 162; Dr. F. E. Hofmeyr (Cape Western Branch) 30; Dr. J. K. McCabe (Border Branch) 25; Dr. J. D. Meyer (O.F.S. and Basutoland Branch) 7; Dr. N. R. Pooler (Natal Coastal Branch) 75; Dr. T. Radloff (Western Transvaal Branch) 14; Dr. F. P. Scott (O.F.S. and Basutoland Branch) 1; Dr. H. M. Segall (Border Branch) 31; Dr. H. S. Shak (Western Transvaal Branch) 6; Mr. A. G. Sweetapple (Natal Coastal Branch) 43; Dr. R. Theron (O.F.S. and Basutoland Branch) 43; Dr. E. W. Turton (Eastern Transvaal Branch) 44; Dr. C. V. van der Merwe (O.F.S. and Basutoland Branch) 2; Dr. J. W. van der Riet (O.F.S. and Basutoland Branch) 4; Dr. D. S. Visser (O.F.S. and Basutoland Branch) 1; Dr. A. A. Zabow (Cape Western Branch) 244. These were checked and confirmed.

The meeting commenced at 10.10 a.m. The President welcomed the members, and the notice convening the meeting was taken as read. Dr. Chapman drew attention to the fact that the meeting had been called on the requisition of 138 members of the Natal Coastal Branch 'with a view to implementing the Medical Services Plan immediately in all Provinces of South Africa'.

The formal resolution, reading, 'that the Medical Services Plan be implemented in all Provinces of the Union immediately', was proposed by Prof. H. Grant-Whyte and seconded by Dr. N. R. Pooler.

The proposer and seconder, together with Mr. Sweetapple, spoke in favour of the motion.

As the speakers for the motion had mentioned the Association's links with medical aid societies and negotiations with the insurance companies, the Chairman of Council rose to give a full explanation of the part played by the Federal Council in the arrangements which had been made over many years. He stated that he would deal more specifically with the question of the extension of the Medical Services Plan at a later stage of the meeting. This he did following the tea interval.

In the debate which followed, an amendment was proposed by Dr. R. Theron, seconded by Dr. Struthers, 'that in view of the fact that the Federal Council has twice intimated to the Directors of the Medical Services Plan that extension of the Plan to other centres in the Union would be welcomed, this Extraordinary General Meeting of members of the Medical Association of South Africa is content to leave the decision regarding extension of the Plan to the Directors to implement when they see fit'.

A number of members spoke for and against the amendment.

Finally, Dr. van der Riet (O.F.S. and Basutoland Branch) moved that the question be put. He was seconded by Dr. Struthers. On being put to the vote, this proposal was *carried*, and the President called upon Prof. Grant-Whyte to reply to the debate.

The Secretary read the original motion and the amendment. He mentioned that a requisition had been received from five members present that voting should be by poll including proxies.

The amendment was then put to the vote and was *carried* by 979 votes to 331.

The President then asked the members who had requisitioned a poll vote whether they would be content to have the amendment put as the substantive motion on a show of hands. They agreed.

The amendment was then put as the substantive motion and was *carried nem. con.*

Dr. Struthers proposed a vote of thanks to the President for his able conduct of the meeting. Acclamation.

The President declared the meeting closed at 1.25 p.m.

DIE LIEFDADIGHEIDSFONDS : THE BENEVOLENT FUND

The following donations during February 1961 are gratefully acknowledged:

Met dank word die volgende skenkings gedurende die maand Februarie 1961 erken:

Votive Cards in Memory of: Geloftekaarte ter Nagtedagtenis aan:

Mrs. R. D. Kidd *by* Natal Inland Branch (M.A.S.A.), Drs. Akerman, Kalley and Peckham; Mr. Justice G. Steyn *by* Dr. Vernon Brink; Dr. P. A. Thornton *by* Dr. R. Schaffer and Mr. R. Lane Forsyth; Dr. W. Gordon Grant *by* Dr. A. J. S. Boyd; Dr. E. Swirsky *by* Dr. A. J. S. Boyd and Mr. M. A. Lautre; Dr. A. B. Bull *by* Dr. R. Lance Impey; and Dr. H. F. Bezuidenhout *by* Drs. E. and F. Meltzer.

Total Received from Votive Cards: / *Totaal Ontvang van Geloftekaarte:* R33.08

Services Rendered to : Dienste Gelewer aan:

Dr. W. G. Schulze *by* Drs. Waynik and Rifkin.

Mrs. J. B. Anderson *by* Mr. Leo Mirkin.

Dr. E. G. Hales *by* Drs. Navid, McCabe and Bloch.

Dr. R. D. H. Baigrie's son *by* Dr. L. E. Lane.

Dr. and Mrs. R. L. Kleinman *by* Drs. C. W. Coplans, B. Goldman, H. and B. Hirschon, L. Blumberg, H. W. Clegg, I. N. Marks, R. Sharp, J. J. van Selm and I. Bradfield.

Mrs. F. P. S. le Rous and daughter *by* Dr. G. H. Findlay.

Betsie Goddefroy *deur* Dr. P. Fisher, Dr. T. B. Enslin en dr. S. V. Potgieter.

Dr. P. Roux *deur* dr. P. Boshoff.

Total Received from Services Rendered: / *Totaal Ontvang van Dienste Gelewer:* R145.00

Donations : Skenkings:

Drs. H. F. Snyman, S. Stein, B. Epstein, M. G. Woolff, P. A. Smuts, I. Goldberg, G. C. Cruywagen, B. P. Friedland, M. A. F. Soffe, G. C. Adams, P. S. Bell, L. J. van Wyk, J. S. Smit, R. M. I. Shacksnovis, M. H. Campbell, C. C. Brown, J. C. Brown, W. R. Hackmann, N. B. H. Veldsman, M. E. Schiele, O. R. Brits, R. B. Peckham, S. Jackson, A. S. Nethercott, D. H. Biggs, H. F. J. Schumann, E. R. D. Eastman-Nagle, C. Zaayman, A. R. Bain, N. M. L. Lund, N. M. Thompson, R. Jacobson, J. E. Cosnett, J. F. Rivers-Moore, J. D. Napier, M. Herman.

	R. C.
Total	40.10
Dr. E. R. Jammy	5.25
Dr. P. Spaarwater	10.00
Dr. C. A. Retief	5.00
Dr. R. Resnekov	4.20
Dr. L. A. M. Gama	4.00
Nel's Rust Dairies per Ladies' Committee of Southern Transvaal Branch (M.A.S.A.)	6.30
Cape Western Branch (M.A.S.A.) Collection Box	5.80
Dr. R. E. Sadleir	6.30
Drs. Harries, Kuschke and Hofmeyr	2.10
Cape Western Branch (M.A.S.A.) Collection Box	4.87
Cape Western Branch (M.A.S.A.) Proceeds of Jones-Phillipson Golf Tournament	21.00
Eastern Transvaal Branch (M.A.S.A.) Proceeds of dinner-dance held at Benoni Lake Club	524.44
Border Branch (M.A.S.A.) Proceeds cabaret evening	248.90
Natal Coastal Branch (M.A.S.A.) Proceeds of fund-raising activities by the Women's Auxiliary	1,000.80
Natal Coastal Branch: Vice President's appeal	173.80
Natal Coastal Branch: Medical Emergency Service Ltd.	200.00
Total Donations : Totale Skenkings	R2,266.06
Grand Total : Groot Totaal	R2,444.14

43ste MEDIESE KONGRES (M.V.S.A.), KAAPSTAD, 24 - 30 SEPTEMBER 1961 : 43rd MEDICAL CONGRESS (M.A.S.A.), CAPE TOWN, 24 - 30 SEPTEMBER 1961

GEKOMBINEERDE AFDELINGSVERGADERINGS

Drie hoof gekombineerde afdelingsvergaderings sal gedurende die Kongres gehou word. Die onderwerpe vir hierdie gekombineerde vergaderings is soos volg:

1. Respiratoriese tekortkoming
2. Antibiotiese middels, chemoterapie en kruis-infeksie
3. Diagnose en behandeling (medies en chirurgies) van afsluitende bloedvatsiekte.

Alle dokters wat van voornemens is om by te dra tot die gekombineerde afdelingsvergaderings, word versoek om opsommings van hul voordragte aan die Sekretaris, Wetenskaplike Komitee, 43ste Suid-Afrikaanse Mediese Kongres, Posbus 643, Kaapstad, te stuur, nie later nie as 30 April 1961.

G. S. Muller Botha
Sekretaris, Wetenskaplike Komitee

Posbus 643
Kaapstad
21 Maart 1961

SYMPOSIA

The Scientific Section of the 43rd South African Medical Congress plans to have two separate and independent symposia of combined interest on:

1. Rheumatic heart disease
2. Pulmonary neoplasia

Intimations of papers to be presented, together with a short summary, should be in the hands of the Secretary of the Scientific Committee not later than 1 May 1961. Completed papers are to be submitted by not later than 1 July 1961.

THE 5TH WORLD ASSEMBLY OF THE ISRAEL MEDICAL ASSOCIATION

The 5th World Assembly of the Israel Medical Association will take place in Israel from 14 - 25 August 1961. A special programme has been arranged in Jerusalem, at the Hadassah University Medical Centre, and in hospitals, clinics, medical centres and institutions all over the country.

The Organizing Committee of the Assembly has endeavoured to arrange as comprehensive a programme as possible, in order to acquaint practitioners with the most interesting medical problems in Israel. The lectures to be delivered will deal with research work which has been done in Israel during the last three years on subjects such as atherosclerosis, tropical diseases, cancer, poliomyelitis, rheumatic fever, leprosy, psychiatry, and public health. These will be followed by a visit to the New Hadassah-Hebrew University Medical Centre at Ein Karem, where clinical rounds and symposia will be held in the different departments.

A comprehensive sightseeing programme of excursions and guided tours to a wide variety of places of historical interest and scenic beauty has been arranged, as well as a social programme, including banquets, receptions, folk-dancing displays, exhibitions, and a fashion show for the ladies.

The round trip fare from Johannesburg to Tel Aviv is R414 Economy Class. Practitioners who intend to be in Israel only for the duration of the Assembly can leave Johannesburg on Wednesday 9 August, returning on Sunday 27 August. Practitioners proceeding to Europe or the USA after the conclusion of the Assembly, can take advantage of the El Al Airlines arrangement, whereby they can stop over in Israel without any extra charges. Additional information about the Assembly may be obtained from Dr. V. Resnekov, telephone 413321, Johannesburg; and Dr. A. Goldberg, telephone 442826, Cape Town.

DOCTOR DANIEL'S DILEMMA

THE CONFESSIONS OF A FAILURE

In his thoughtful moments every doctor enquires into the reasons why his patients leave him. The fickleness of human nature is cited as the common cause. In my case, however, there was more to it than could be accounted for by this capriciousness — there seemed to be something basically wrong.

Mindful of my own short-comings, I resolved on a systematic study of the literature. I went further; I proceeded on an extended postgraduate course. All this did not seem to have any effect on my practice. I tried very hard to please people; I resorted to every means to hold what I had.

Throughout my career it was my good fortune to be associated with successful practitioners — men who won the confidence of the public. What were the reasons for their success? There were many; but there was *one* quality they all had in common and that was a deep interest in their work. Whether that interest was clinical, material or personal is beside the point. They spent themselves in the service of their patients. The degree of their success was in proportion to the intensity of their service.

In this discovery lay part of the answer to my problem.

The Faculty of Making People feel Important

I now decided to make a reassessment of the value of the human personality. That personality was, I realized, the greatest and the most valuable of all created things. My approach to people would henceforth be governed by charity, understanding, insight, sympathy, compassion, kindness, tolerance, patience, unselfishness, seeing the other's point of view, making allowances for them, respect, reverence, esteem, humility, forgiveness, looking for the best in others, devotion to their interests, serving them intensely, and respecting their achievements.

The Sanctity of the Sickroom

Let him who enters here take the shoes from off his feet. My presence in this room is a privilege. As I enter into this hallowed scene of human distress I shall be sharing the innermost secrets of the sufferers. May I be worthy of such confidence. God forbid that I should allow vain and insincere thoughts or selfish motives to obtrude the scene. Guard me from hastiness or impatience. May love fill my heart and mind. Give me the faculty of *insight* to look into the body, mind and heart of the patient, discern his thoughts and his feelings and diagnose what is wrong with him. Guard me from error. Give me the power to inspire confidence and courage and to uplift the spirit.

I shall now forsake the competitive spirit and forego personal ambition. I shall serve my fellowmen with fervent devotion.

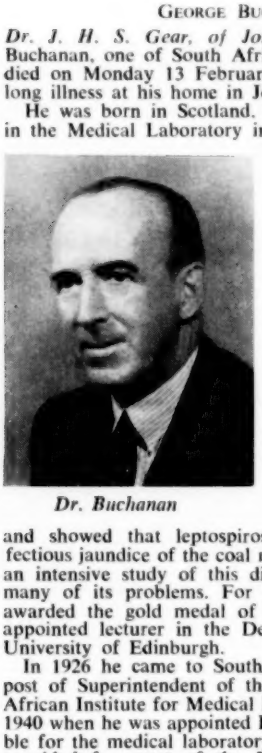
If failure has taught me this, it may have been worthwhile.

IN MEMORIAM

GEORGE BUCHANAN, M.B., CH.B., M.D. (EDIN.), D.P.H., R.C.P.S. (EDIN.) R.F.P.S. (GLASG.)

Dr. J. H. S. Gear, of Johannesburg, writes: Dr. George Buchanan, one of South Africa's most distinguished scientists, died on Monday 13 February at the age of 78 years after a long illness at his home in Johannesburg.

He was born in Scotland. As a young man he held a post in the Medical Laboratory in Khartoum in the Sudan, where he met Sir Andrew Balfour, who inspired him to take up medicine as a career. He returned to Scotland to study medicine at Edinburgh University where he had a most distinguished undergraduate career, winning a number of awards and medals. His course was interrupted by the first World War, during which he served as a Surgeon Probationer and, after being granted special leave to qualify in medicine, as a Surgeon Lieutenant in the Royal Navy. Later, as a Captain in the RAMC, he served in France. At this time he began his studies on jaundice. He continued this work after the war and showed that leptospirosis was responsible for the infectious jaundice of the coal miners in Scotland. He carried out an intensive study of this disease and was able to elucidate many of its problems. For his thesis on this work he was awarded the gold medal of the University. In 1925 he was appointed lecturer in the Department of Bacteriology at the University of Edinburgh.



Dr. Buchanan

In 1926 he came to South Africa to fill the newly created post of Superintendent of the Routine Division of the South African Institute for Medical Research, which he occupied until 1940 when he was appointed Deputy Director. He was responsible for the medical laboratory service which the Institute then provided for most of the Union of South Africa and the neighbouring territories. He also found time despite this heavy burden of work to undertake a number of original studies of important medical problems in South Africa, particularly in the field of blood diseases and in tropical medicine.

For many years he was a member of the Leprosy Board of the Union Health Department. In 1936 he was appointed the first Honorary Professor of Clinical Pathology at the University of the Witwatersrand, a position he held until the end of 1949.

Although he was an inspiring teacher it was only rarely that he could be persuaded to give a lecture. He was the mentor to the group of young pathologists who received their early training at the South African Institute for Medical Research, many of whom now fill senior posts all over Southern Africa. He was also responsible for organising the department of Clinical Pathology at the University Medical School and for ensuring the close collaboration between the Institute and the University in the field of medical education. He retired as Deputy Director in 1950, but continued in the service of the Institute for a further seven years as a senior research officer. This time he spent in a special study of tuberculosis and again made important contributions to our knowledge.

He was quiet and unassuming, but commanded the devoted loyalty of his staff and quickly gained the respect of his colleagues and associates. He had a profound knowledge of his special subjects of pathology and bacteriology, and a wide knowledge of general medicine. He was often called into consultation by his colleagues at the Johannesburg Hospital and elsewhere to solve their difficult cases. He brought to these consultations a great wisdom and understanding of human nature. Among many outstanding personal characteristics was his kindness and his sympathy with other's troubles, virtues which often found expression in the help he gave to the staff of the Institute, to his colleagues and their families, and to his patients. He was a keen golfer and an ardent artist. He often spent his holidays painting pictures of scenes of South Africa, a land he loved and which owes him a great debt of gratitude for the life he devoted to her service.

Our deepest sympathy is extended to his widow and their two married daughters.

IN DIE VERBYGAAN : PASSING EVENTS

Dr. J. D. Logan Kirstein has recently commenced practice as a specialist surgeon at 501 SA Mutual Building, Gardiner Street, Durban. Telephones: Rooms 20569, residence 86228.

* * *

Dr. Louis F. Freed, M.A., M.D. (Rand), D.Phil. (Pret.), D.Phil. (O.F.S.), D.P.M., F.R.S.S.Af., of Johannesburg, who was recently elected a Member of the New York Academy of Sciences, has been invited by the University of the Orange Free State, Bloemfontein, to serve as an honorary visiting lecturer in the departments of Sociology, Criminology, and Psychology.

* * *

University of the Witwatersrand Medical Graduates Association: Postgraduate Refresher Course. In the issue of the *Journal* of 18 March, we published a notice advising of an intensive weekend Postgraduate Refresher Course for General Practitioners to be held in July this year. We have now been advised by the President of the Medical Graduates Association that the dates given to us were incorrect, and that this course will be held from Monday 17 July to Friday 21 July 1961.

* * *

University of Cape Town and Association of Surgeons of South Africa (M.A.S.A.), Joint Lectures. The next lecture in this series will be held on Wednesday 5 April at 5.30 p.m. in the E-floor Lecture Theatre, Groote Schuur Hospital, Observatory, Cape. Dr. L. Werbeloff will speak on 'X-ray features of pancreatic masses'. All members of the Medical Association are welcome to attend this lecture.

Southern African Cardiac Society. A business meeting of the Cape Western Region of the Southern African Cardiac Society was held at Groote Schuur Hospital, Observatory, Cape, on 23 February 1961, at 8.15 p.m.

During the meeting reports were read by members of the Executive Committee and proposals to change the Constitution were made by Prof. A. J. Brink, and seconded by Dr. D. G. le Roux, on behalf of the Heart-Lung Group of the Karl Bremer Hospital, Bellville, Cape. These proposals are to be circulated to the various 'sections' in South Africa and then discussed by the National Council.

Dr. G. S. Muller Botha made proposals for the forthcoming Medical Congress for the local branch which were accepted. The Chairman, Dr. M. Nellen, announced that the 4th World Congress of Cardiology will be held in Mexico City from 7 to 12 October 1962. Dr. Len Braudo, the National Secretary, has been advised and will be informing the various sections of the Southern African Cardiac Society.

Mr. W. Piller presented an important report on the progress of the Society of Cardiological Technologists of South Africa. The Society, under his chairmanship, has progressed well since its inception in January 1960. Membership now stands at 13, and represents the majority of the technical staff engaged in cardiology in the city of Cape Town and in Bellville. In Mr. Piller's report he expressed regret that interest from Johannesburg and Pretoria has been disappointing. He hopes that this will be remedied. In Cape Town the first course of Associateship of the Society is now ending, and examinations are to be held within the next 8 weeks. On successfully passing the examinations, the student member will be eligible for the certificate of 'Associate of the Society'. The syllabus includes anatomy, physiology, photography, basic physics and electronics. The lecturers during the past year were Messrs. W. Piller, C. Goosen, R. Menaud, G. Mead, and Dr. W. Beck.

Mr. Piller is now in communication with the South African Medical Council for national recognition. Groote Schuur Hospital is to become a training centre for cardiological technologists.

The new executives for the Cape Town Section are Dr. M. Nellen, Chairman; Dr. L. Vogelpoel, Secretary; Dr. V. Schrire, Treasurer; and members of the Executive are Drs. T. Dry, B. Bronte-Stewart and W. Beck.

* * *

The South African Institute for Medical Research, Johannesburg, Staff Scientific Meeting. The next meeting will be held on Monday 10 April at 5.10 p.m. in the Institute Lecture Theatre. Dr. F. Zumpt will speak on 'Problems on the epidemiology of relapsing fever in Africa'.

* * *

Suid-Afrikaanse Mediese Kongres—Ekskursie-tariewe. Lede van die Mediese Vereniging wat van plan is om na Kaapstad te reis om die 43ste Mediese Kongres op 24 - 30 September 1961 by te woon, sal bly wees om te verneem dat die Suid-Afrikaanse Spoorweë afslag ekskursie-tariewe *van* alle Provinsies *na* alle Provinsies aanbied tussen 15 September en 10 Oktober 1961.

Die basis van die afslag is *gewone retoergelde min* 25%, en kaartjies sal geldig wees as die retoerreis binne een maand na die begin van die heenreis voltooi word. Vanaf 1 April 1961 sal almal wat 4 of meer retoer spoorweg-kaartjies het, in staat wees om hul motor teen 'n afslag van 50% van die tarief per spoor te vervoer, bv. om 'n motor per spoor van Johannesburg na Kaapstad te vervoer sal R9.50 kos in plaas van R19.00.

* * *

Benevolent Fund. The Eastern Transvaal Branch of the Medical Association has donated an amount of R534.44 to the Benevolent Fund of the Association, being the proceeds of a dinner-dance held at the Benoni Lake Club on Friday 18 November 1960. The organizers of this function would like to express their sincere thanks and appreciation to Mrs. Phoebe Gould, wife of the President, Dr. A. Gould, and her Ladies' Committee for their wonderful support, and to the firms which advertised in the sponsored programme.

* * *

Motor car membership discs. Members of the Medical Association are reminded that Federal Council has ruled that only one motor car membership disc may be issued to each member.

Lidmaatskapskyfies vir motors. Lede van die Mediese Vereniging word daaraan herinner dat die Federale Raad besluit het dat net een lidmaatskapskyfie aan elke lid uitgereik kan word.

* * *

Vakante betrekking: Geneesheer, Strydenburg. In 'n brief aan die Mediese Vereniging sê die Stadsklerk van Strydenburg dat die gemeenskap daar nou geen geneesheer het nie, aangesien die vorige geneesheer na Williston toe vertrek het. Indien enige geneesheer in 'n praktyk op Strydenburg belangstel, word hy versoek om met die Stadsklerk in verbinding te tree om volle besonderhede.

* * *

Mr. H. Berzen, orthopaedic surgeon, has commenced practice in partnership with Mr. W. T. Ross at 16 Lister Building, Jeppe Street, Johannesburg; telephone 232467: and at 205 Admirals Court, 31 Tyrwhitt Avenue, Rosebank, Johannesburg; telephone 423187.

* * *

Johannesburg Telephone Directory. The medical section of the Johannesburg Telephone Directory can be inspected by medical practitioners at Medical House, Esselen Street, from 1 to 10 April 1961.

* * *

Afdeling Noordelike Gebiede, Tak Wes-Kaapland. Die volgende maandelikse vergadering van hierdie Afdeling word in die Groot Lesingsaal, Karl Bremer-hospitaal, Bellville, op Woensdag 12 April om 8.15 nm. gehou. As sprekers sal optree: dr. J. J. W. van Zyl (Twee gevalle van hematemese); dr. Hamilton Bell (Pynlike skouers); dr. C. J. B. Muller (Eventiasie van die diafragma—röntgenologiese bespreking); dr. J. N. de Klerk (Ureter obstruksie); en prof. J. N. de Villiers (Placenta previa). Verversings sal bedien word. Alle lede en andere word vriendelik uitgenooi om teenwoordig te wees.

NUWE PREPARATE EN TOESTELLE : NEW PREPARATIONS AND APPLIANCES

VI-DAYLIN-M

Abbott Laboratories announce the introduction of a new addition to their well-known Vi-Daylin range, and supply the following information:

The new preparation is called VI-DAYLIN-M, and contains 9 important vitamins, 8 valuable minerals, plus lipotropic factors.

VI-DAYLIN-M is a citrus-flavoured nutritional supplement. In syrup form, it appeals particularly to children. However, it is also enjoyed by older patients who for one reason or another cannot tolerate tablets and would prefer a liquid nutritional preparation.

Indications. VI-DAYLIN-M is highly effective as a dietary supplement for the prevention and the treatment of vitamin-mineral deficiencies. It is of particular service in cases of improper diet, poor intestinal absorption, and whenever an increased amount of vitamins and minerals is desired.

Daily dose. For infants, ½ teaspoonful; for children, 1 teaspoonful, and for adults, 2 teaspoonfuls. Therapeutic doses should be determined by the physician for each individual.

VI-DAYLIN-M is packed in a 4-oz. bottle and enclosed in an elegant plastic container.

The price to the public is 95 cents (9s. 6d.)

HYGROTON

J. R. Geigy S.A., announce the introduction of Hygroton, a new long-acting diuretic, and supply the following information:

Composition

Hygroton is made up of the following chemical composition: 1-Oxo-3-(3'-sulphamoyl-4'-chorophenyl)-3-hydroxyiso indoline (Chlorphthalidolane).

Indications

Because of its chemical structure, absorption and excretion, Hygroton promotes a diuresis which lasts for an average of 60 hours; 72 hours in some cases. Due to this prolonged action a comfortable smooth effect, free from brisk flooding, is obtained. The effect of diuresis and saluresis is obtained with a minimum loss of potassium. However, in patients

suffering from cirrhosis or cardiac insufficiency, potassium supplementation is necessary. No toxic effects have been reported and there are no contra-indications. Hygroton is indicated in oedematous states and for the treatment of hypertension. Each tablet contains 100 mg. of active substance.

Dosage and Administration

In mild oedema and for maintenance, 1 or 2 tablets three times a week will suffice e.g., Tuesday, Thursday and Saturday.

In severe oedema, where a rapid effect is desired, a daily dose of 4 tablets (0·4 g.) is indicated; the entire dose is best given in the morning. This dose can be repeated on successive or alternate days. Diuresis lasting at least 60 - 72 hours can be expected to supervene rapidly, and within a few days it should be possible to change to the maintenance dosage of 1 - 2 tablets (0·1 - 0·2 g.) two or three times a week.

For the treatment of hypertension, 1 tablet per day is adequate. When the bloodpressure has been lowered, the dosage may be reduced to 1 - 2 tablets twice a week.

Further information may be obtained from Pharmakers (Pty.) Ltd., P.O. Box 4125, Cape Town.

BOEKBESPREKINGS : BOOK REVIEWS

EAR, NOSE, AND THROAT DISEASES

Synopsis of Ear, Nose, and Throat Diseases. By Robert E. Ryan, B.S., M.D., M.S. (ALR), F.A.C.S.; William C. Thornell, A.B., B.M., M.D., M.S. (ALR), F.A.C.S. and Hans von Leden, M.D., F.A.C.S., F.I.C.S. Pp. 335. 59 illustrations. South African price: £2 17s. 6d. Local agents: P. B. Mayer, P.O. Box 713, Cape Town, and Westdene Products (Pty.) Ltd. Medical Book Department, P.O. Box 7710, Johannesburg. St. Louis: C. V. Mosby Co. 1959.

This small volume is another of the new 'American Synopsis' series.

A practical and attractively bound book, it is written to serve as a handy guide for the busy general practitioner, house surgeon, and student.

It is divided into 4 parts, dealing with the ears, the nose and paranasal sinuses, and the larynx.

Each part commences with chapters on applied anatomy and physiology which serve as good bases for the chapters which follow.

On the whole the content is good and is attractively presented. The index is comprehensive, but there is no bibliography.

This book fulfils its aim and will prove useful to those who acquire it. P.A.T.

FRUIT AND VEGETABLE JUICES IN DISEASE

Die Rohsäfte-Kur (The Raw Juices Treatment). By Eugen Heun, Dr. Med., Dr. Phil. Herborn/Dillkreiss, Germany. 288 pages DM.19.50 Stuttgart: Hippocrates-Verlag. 1960.

Dr. Heun is a specialist physician and has, for more than 40 years, been interested in, and done research on, the relationship between diet and disease. He has paid particular attention to the very important rôle played by diet, in its broadest sense, in the prevention and cure of disease, especially chronic disease.

In this book, which is a second and completely revised edition, the author describes the development of his method of treatment of disease with fresh fruit and vegetable juices and the therapeutic principles involved. He rightly agrees with Bircher-Benner that the prevention and cure of disease can best be accomplished by diets consisting chiefly of fresh raw fruit and vegetables. These diets are also of great value in assisting the aged to retain their health and productivity as long as possible.

The book is divided into 3 main parts:

In Part 1, the author supplies details concerning the constituents of fruit and vegetables according to the latest analyses and scientific knowledge. Attention is paid chiefly to carbohydrates, nitrogenous substances, fats, aromatic substances, organic acids, minerals, trace elements, enzymes and vitamins. This information is of great value in the selection of the various fruits and vegetables in the composition of diets for different diseases. The recommendations are made on a biological and food chemistry basis.

In Part 2, a detailed description is given of the methods used in the application of the treatment with fresh raw fruit and vegetable juices. A harvesting calender and weekly charts for the various seasons are given. However, it should be kept in mind that these apply to countries in the northern hemisphere. Useful diet sheets for spring, summer, autumn and winter are supplied. Details concerning general treatment, additional to that with diets, are given.

In Part 3, the author gives a detailed description of the application of treatment, as applied to various illnesses, with fresh fruit and vegetable juices. Also the results of the treatment are given. The author has found this method of treatment of great value in diseases of the mouth, gastro-intestinal tract (including constipation), liver and gallbladder, blood-forming organs, heart and blood vessels, respiratory organs, endocrine glands, kidneys and bladder, skin, sex organs, and the nervous system. The great value of this monograph is materially enhanced by several hundred references to literature dealing with the subject matter of this book.

The author has succeeded eminently in his aim of informing the general reader of the great value of fresh raw vegetables and fruit in the prevention and cure of disease. This book is also most useful to those of us who are interested in the scientific aspect of diets, especially those including fruit and vegetables. D.G.S.

BRIEWERUBRIEK : CORRESPONDENCE

SNAKEBITE: REPORTING OF CASES

To the Editor: I have to inform you that the following statement on page 46 of the *Journal* dated 21 January 1961, has come to the notice of the Department: 'A true estimate of the incidence is difficult to obtain despite the requirement of the law that all cases of snakebite, whether fatal or not, be reported to a magistrate for the purpose of medical statistics.'

In this connection, I have to advise you that the reporting of cases of snakebite, whether fatal or not, is not a requirement of the law, but merely a request made by the Secretary for Health to all magistrates and local authorities in the Union.

The following is an extract from the circular, No. 36 of 1919, in which the request was made:

> 'With a view to ascertaining the frequency of, and mortality from, snake-bite in the Union, and the organization of precautionary measures, I shall be pleased if you will kindly notify me of every case coming to your notice where a human being is bitten by a snake, furnishing the following particulars as far as obtainable: Name, age, sex and race of the person bitten; the position of the bite or bites; the date and time of the accident; the species of snake (when this is doubtful the snake should, where possible, be placed in spirit and sent for identification); the symptoms which followed the bite, full particulars as to the treatment and remedies used, and the final result (where death results, the date and time should be stated). Similar information regarding bites by scorpions, poisonous spiders, etc., will be much appreciated.'
>
> *Secretary for Health*

Pretoria
16 March 1961

BURIED SILK SUTURES IN LENS SURGERY

To the Editor: I was gratified to note that my paper entitled 'An assessment of buried silk sutures in lens surgery', published in the *Journal*,[1] prompted support for the advantages of these sutures from some ophthalmic surgeons.[2,3]

However, one correspondent appears to have misread the paper or to be unhappy about the interpretation of the figures I presented.

I therefore feel I should reiterate the salient features of this paper. My intention was merely to emphasize the advantages of using buried sutures as opposed to the more classical 'exposed' sutures, while at the same time pointing out, by using a similar group as a control, that the results, when using buried sutures are, in this series, no worse than those when using 'exposed' sutures, but not necessarily better.

This would appear to me to be a necessary part of the argument when the use of a surgical technique is advocated because of its advantages over the classical one.

On the other hand, a purely clinical comparison cannot be expected always to *prove* some point, and this does not make it valueless.[4] My figures cannot be expected to *prove* anything, nor was this my purpose when presenting them. What they do show, as I have already mentioned, is that the results obtained when using the buried suture technique are comparable with those obtained from 'exposed' sutures.

This is the only correct conclusion that can be drawn from a comparison of these two series which are, after all, similar in all relevant respects.[5] The number of cases involved approximate closely, they are unselected and of European descent, and treated in two undergraduate teaching hospitals. In both hospitals the nursing and postoperative care is of the highest standard. The only major difference is that in the one group all operations were done by a single surgeon, in the other by 12 surgeons, all on the hospital staff. The series of operations by these 12 surgeons was analysed by me in an earlier paper,[6] in which I pointed out the excellence of their results. Obviously, there was no intention in my article to be derogatory to any of these 12 surgeons.

This difference is minimized when one recalls that an eminent authority,[7] writing on the results of cataract extraction, is willing to consider these in general terms and maintains that, in the hands of skilled surgeons, one can expect a good result in 96% of cases. This merely bears out what is already known from the literature. There is little difference in the results from lens extraction carried out at different clinics by different surgeons, when these are compared statistically.

The core of my paper is contained in the summary, where I took the trouble to stress that the results of the two series are 'comparable'.

It is obviously unwarranted and even unjustified to draw any 'inferences'[3] from these figures, particularly one purporting a significant difference between the two groups. No such difference exists (except for hyphaema, and this was adequately dealt with in the text) nor should one try to invent it.

The question of technical difficulties, which was also raised, is not relevant. This is a matter of opinion which will vary with different surgeons.

Finally, a trial series where the same surgeon selects alternate treatment and control cases, as suggested, is less valuable, according to Hill.[8]

M. H. Luntz

Church Street
Cape Town
18 March 1961

1. Luntz, M. H. (1961): S. Afr. Med. J., 35, 61.
2. Correspondence (1961): *Ibid.*, 35, 140.
3. Correspondence (1961): *Ibid.*, 35, 164.
4. Hill, H. (1955): *Principles of Medical Statistics*, 6th ed. pp. 8 and 255. London: The Lancet.
5. *Idem* (1955): *Ibid.*, p. 4.
6. Luntz, M. H. (1957): S. Afr. Med J., 31, 20.
7. Stallard, H. B. (1958): *Eye Surgery*, 3rd ed. p. 578. Bristol: John Wright and Sons, Ltd.
8. Hill, H. (1917): *Op cit.*[4], p. 240.

UITBUITING VAN DIE MEDIESE PROFESSIE

Aan die Redakteur: Myns insiens behoort geen persoon wie se belasbare inkomste meer as R2,000 per jaar is, toegelaat te word om lid te wees van 'n siektefonds soos die van dié spoorweë en mynwese nie.

Siektefondse is gestig en erken deur medici as 'n toegewing aan minderbevoorregte persone met karige salarisse. Enige persoon wie se inkomste meer as R2,000 per jaar is, het geen reg om lid van 'n siektefonds te wees nie.

Toe die huidige bestuurders karige salarisse verdien het, was die medici gewillig om hulle te help, maar dit is onredelik om te verwag dat hulle nog altyd daardie toegewings en voordele moet geniet wanneer hulle inkomste in baie gevalle hoër is as die van sommige medici.

Ek wonder of ons vriende in die regsprofessie ooit 'n soortgelyke toestand van sake in hul geledere sou toelaat?

Gewese Spoorwegdokter

Johannesburg
13 Maart 1961

INSTRUCTIONS TO BANTU PATIENTS

To the Editor: I should be glad to hear from any practitioner or clinic who has available ready-printed or cyclostyled instructions for Bantu patients. I am particularly thinking of instructions in Xhosa for infant feeding and obesity diets.

I should also be glad to see any similar material, e.g. advice in English or Afrikaans for Bantu patients re immunization or ante-natal care, or advice to patients with tuberculosis.

If someone is prepared to supply copies of printed instructions, will he please quote the cost per dozen, or per hundred, as the case may be.

Dr. L. Albert

44 Union Street
East London
11 March 1961

A NEW METHOD OF TESTING DIABETICS?

To the Editor: A member of my family found that if she wet her fingers with tap water and held 'testape' in these wet fingers she got the same colour change as testing her urine with the tape.

I have subsequently tested a few diabetics in the same way and always got the same result as with urine.

I mentioned this to a few colleagues, none of whom had ever heard of this method of testing diabetics. Is this a known fact? Surely this is a more useful test than testing urine, for it gives an immediate indication of what the blood sugar is at the moment and can be used on patients who are unconscious or dehydrated and not passing urine frequently.

Also, could somebody explain the mechanism of the reaction.

Dr. I. Brajtman

40 Durban Road
Bellville
14 March 1961

ASSOCIATION OF MEDICAL STUDENTS OF SOUTH AFRICA

To the Editor: Last year you very kindly printed a short article on our Association's activities, which included a request for vacation jobs (unpaid) at mission hospitals for senior medical students.

As a result of this, we received one communication from a Nyasaland mission hospital, which was taken up by one of the members of the Executive Committee of the Association of Medical Students of South Africa, and was found to be most satisfactory to all concerned.

I am writing now to ask if you can help us to bring this scheme to the notice of the various hospitals. We feel that this scheme could be of much value to the students concerned and that the hospitals could no doubt benefit from the extra pairs of hands.

I hope that you will be able to bring this effectively to the notice of your readers.

Peter Arnold
President

Medical School
Hospital Hill
Johannesburg
15 March 1961

STUDENTS MEDICAL COUNCIL: CONFERENCE

To the Editor: Every year the Students Medical Council of the University of the Witwatersrand holds a Medical Conference. A subject is chosen which is of importance and interest to the medical profession of South Africa, and the Union's leading authorities on this subject are invited to present papers on their particular aspects.

This year we will be holding our Eighteenth Annual Conference. The conference will be held at the Medical School, Johannesburg, from 22 May to 26 May. The subject of the conference is 'Blood dyscrasias'. A provisional programme is being drawn up, and a number of speakers have already been invited. As soon as the programme is finalized it will be forwarded to you.

The proceedings of the conference will be published in *The Leech* at a later date.

We should be very grateful if you would bring our conference to the notice of your subscribers so as to inform them in advance of the dates and title of the conference.

A. Kayle

Medical School
Hospital Hill
Johannesburg
12 March 1961

THE TREATMENT OF SHARK ATTACK

To the Editor: I am reluctant to criticize what is evidently a sincere attempt to improve results in dealing with the terrible injuries inflicted in shark attacks,[1] yet I cannot allow Dr. Campbell's recommendations to pass unchallenged.

According to his figures, in 20 years 40 shark attacks have occurred in Natal. It is evident that one man can have had only very limited experience in the emergency treatment of these injuries. Can one draw valid conclusions from a few instances where victims, treated according to his recommendations, have survived? It seems to me that these injuries are similar in most respects to war injuries and certain types of civilian traumatic injuries, and that their management must be based on the extensive, well-documented experience of men whose everyday task is, or has been in war time, to deal with such injuries.

The empiricism of Dr. Campbell's advice should call for strong criticism from all those who have a wide experience of trauma and resuscitation. (He quotes only one reference to published medical literature — an article of his own.) I prefer not to comment on the surgical measures advocated, e.g. the advice 'if bowel is involved, resect widely and exteriorize', but will join issue on the correctness of the first-aid measures.

Shock in trauma is due to blood loss.[2-10] Neurogenic 'shock' may compound and cloud the clinical appearance, but it is doubtful whether it contributes to the pathological sequelae of injury or to its mortality.[2,9,11] The treatment of massive injury is primarily the prevention of further blood loss and its rapid replacement with whole blood. The 'new' measures advocated by Dr. Campbell are:

1. That patients should be left flat in the head-down position on the beach.
2. 'Beach resuscitation' is carried out — rush plasma and blood to the patient, not *vice versa*.
3. Rely on antibiotics. These have reduced the need for radical and emergency surgery (*sic*).

Details of resuscitation include: (1) Use of tourniquets; (2) use of intravenous saline followed by plasma which is kept on the beaches; (3) morphine, gr. ¼ - ½; (4) the use of 'Minnett's apparatus', i.e., give oxygen by positive pressure; and (5) record blood pressure and pulse at intervals. These measures are maintained until the patient improves.

This régime has been widely interpreted by the press, public, life-savers, and doctors to mean that victims of shark attack should be left lying on the beaches until 'significant improvement is demonstrable' which is taken to mean at least 30 - 60 minutes. I say that this may result in many patients dying of blood loss before ever reaching a hospital. Haemorrhage may be very difficult to stop, and the practical difficulty of giving adequate blood transfusion on a beach to a cold, exsanguinated patient may be considerable. In my experience it takes at least 25 minutes for blood to reach even our centrally situated nursing homes and hospitals from the blood bank, and I have known an ambulance to take almost an hour to get a stretcher down to Clifton beach, Cape Town's most popular local beach. Therefore, surely, it is better to take the patient to hospital as soon as possible.

To be brief, I suggest that *only* the following resuscitative measures should be carried out before moving the patient:

1. Immediately apply tourniquets and/or pressure bandages which must be constantly checked and if necessary held in place.

Comment: We have seen patients arrive in hospital exsanguinated after a tourniquet has slipped, unnoticed, in transit. A firm pack in a deep wound may be the only way of applying pressure and stopping bleeding.

2. Where plasma, plasma substitute or blood, and a doctor used to giving intravenous injections, are together on the spot, transfuse what can be given in as short a time as possible.
3. Get the patient to hospital as soon as possible, keeping him head-down with his lower limbs elevated if possible.

Comment: Elevation of a limb will help to stop bleeding, and elevation of both legs provides auto-transfusion of up to 40% of the blood volume.

The following points must be remembered:

1. *Do not give morphine* or sedation as a routine. Most severely injured patients do *not* require morphine; they complain of being cold, not often of pain, unless fractured limbs are being moved. When morphine is necessary it must be given in small doses (*never* morphine, gr. ¼) until the patient is warm or anaesthetized. It must be given intravenously, since it will not be absorbed for hours if given by another route; in that case it would be useless and dangerous.
2. *Do not delay* in waiting for an ambulance or for blood (unless they can be guaranteed to arrive within 15 minutes).
3. *Do not give oxygen* unless the patient has a stove-in chest injury or has been drowned. We advocate mouth-to-mouth respiration as the first-aid treatment of drowning.[5] Oxygen has little place in the treatment of haemorrhage and may even be harmful.[6] Oxygen under pressure has no place in the treatment of haemorrhagic shock. (Incidentally, the 'Minnett apparatus' referred to by Dr. Campbell is presumably Stephenson's 'minuteman', a device for cycling oxygen by an automatic valve to give positive or positive/negative pressure. It may be confused by him with Minnitt's apparatus for gas and air obstetric analgesia.)

In the Korean war, American medical teams achieved excellent results in the treatment of the severely injured[7,9,10] which they attributed to 2 main factors:

(1) Early evacuation of casualties to field hospitals, made possible by helicopters; and (2) adequate blood transfusion, which sometimes meant up to 20 pints. A patient with severe injuries may succumb very rapidly unless haemorrhage is quickly arrested and blood given quickly. Any delay in either measure may mean that the patient is lost.

Prolonged hypotension leads to irreversible pathological changes in the body and, despite massive transfusion, the patient may die. On the other hand the early response to injury may be misleading in that the blood pressure may be maintained for some time before, finally, severe collapse occurs. Nothing is gained by delay; the expected improvement will probably not occur and adequate blood transfusion is delayed. I believe that this enforced rest before transfer to a hospital is a dangerous policy not based on sound principles.

These remarks apply equally well to all major injuries sustained in field conditions — e.g. road accidents, therefore this discussion has more than an academic or occasional application.

D. M. Jowell

318 Medical Centre
Cape Town
6 March 1961

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